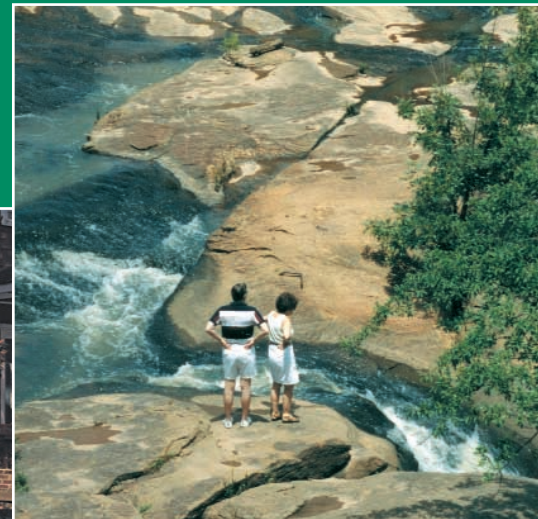
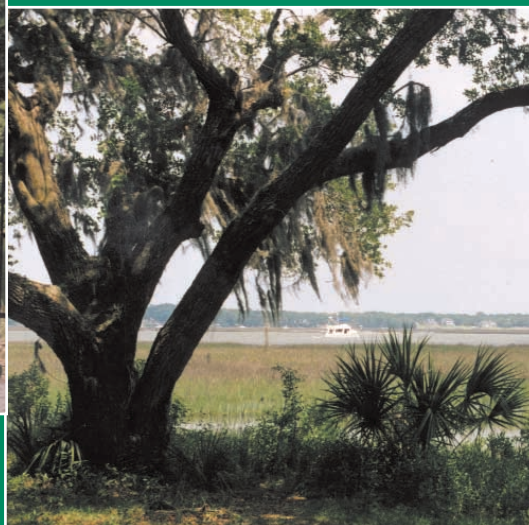


The South Carolina Department of Health and Environmental Control

DHEC

2002



Healthy People Living In Healthy Communities:
A Report on the Health of South Carolina's People and Environment 2002



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A Message from the Commissioner

Commissioner C. Earl Hunter



2001 was a year of successes and extreme challenges. Never could we have dreamed that public health would be called on to play such a significant role in responding to the national emergency of Sept. 11 and its aftermath. South Carolinians and the nation saw public health in action, and we performed extremely well.

Additionally, this past year offered opportunities for the public to see just how intertwined health and environment are. In South Carolina, Upstate residents saw health and environment teams working to assess the environmental extent and health impact of uranium in

their drinking water. West Nile Virus threatened the South, and we stepped up our environmental surveillance and health education to medical providers to detect the disease, which we so far have escaped. Anthrax hoaxes required a rapid response by our epidemiologists, lab staff and health and environmental teams through the state. Through our partnerships with the FBI, State Law Enforcement Division, local police and fire departments, and public drinking water providers, as well as hospitals and other medical providers, we were able to effectively assess and respond to South Carolinians' concerns.

Partnerships are effective tools toward health and environmental improvement and protection. While the ideal outcome of partnerships is to make sure the public is getting needed services, partnerships also help us use our resources in the most effective ways. That has been particularly important in the past two years because budget reductions have caused considerable challenges. You will see many examples of our successful partnerships throughout this report.

Our partnerships for children continue to grow. By the end of 2001, we had 130 public-private partnerships providing children more access to medical care and support services and removing them from emergency room

care. Our partnerships with industries through the Brown-fields/Voluntary Cleanup Program are returning contaminated, abandoned industrial sites to uses that stimulate local economies.

But we still have work to do. Obesity is an epidemic; diabetes, HIV/AIDS and cardiovascular disease continue to claim too many lives, especially among our minority population. The need for communities to address burgeoning growth through planning and zoning is critical. Growth issues also need to be addressed with other health and environmental issues in mind, such as designing new developments to be walkable to encourage a healthier lifestyle and reduce our need for vehicles that lead to increased air pollution.

This report highlights the many activities DHEC undertakes to improve the health and environment of this state. Each chapter reflects an agency goal and some of the issues and challenges that must be addressed to achieve that goal. I urge you to read, understand the issues and challenges, and do your part to improve your health and the environment of your community.

C. Earl Hunter

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About this book

The title of this book reflects the S.C. Department of Health and Environmental Control's long-term vision for the future of South Carolina, **healthy people living in healthy communities**. Each chapter addresses a long-term goal from the agency's Strategic Plan. The goals reflect our role as the state's public health and environmental agency in carrying out the three core functions of public health: assessment, policy development and assurance. The goals also build on national efforts in public health such as Healthy People 2010. These goals are statements of long-term changes that will move us toward our vision. A general appendix with more detailed data begins on page 62.)

What is Healthy People 2010?

Throughout the following sections you will see references to Healthy People 2010 objectives. These are the nation's health objectives for the first decade of the new century. These objectives are used by states, communities, organizations and others to develop health improvement programs. Healthy People 2010 builds on initiatives pursued over the past two decades. South Carolina is committed to improving the health status in South Carolina by working toward the Healthy People 2010 goals and objectives.

Para informacion en español, comunicarse
con su departamento de salud local
(ver foro interior)

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Increase local capacity to promote and protect healthy communities

A healthy community is one that embraces the belief that health is more than merely the absence of disease; a healthy community includes those elements that enable people to maintain a high quality of life and productivity. Our desire is to live long, healthy lives in a community where we can find a fulfilling job, have friends, raise a family, and retire with the assurance that our needs will be met. The components leading to lifelong good health go beyond having access to medical providers and hospitals. Good health encompasses physical, emotional, social and economic well-being. Healthy families need income, transportation, shelter, education, healthy working conditions and a safe clean environment.

Issue: Helping communities improve their health, environment

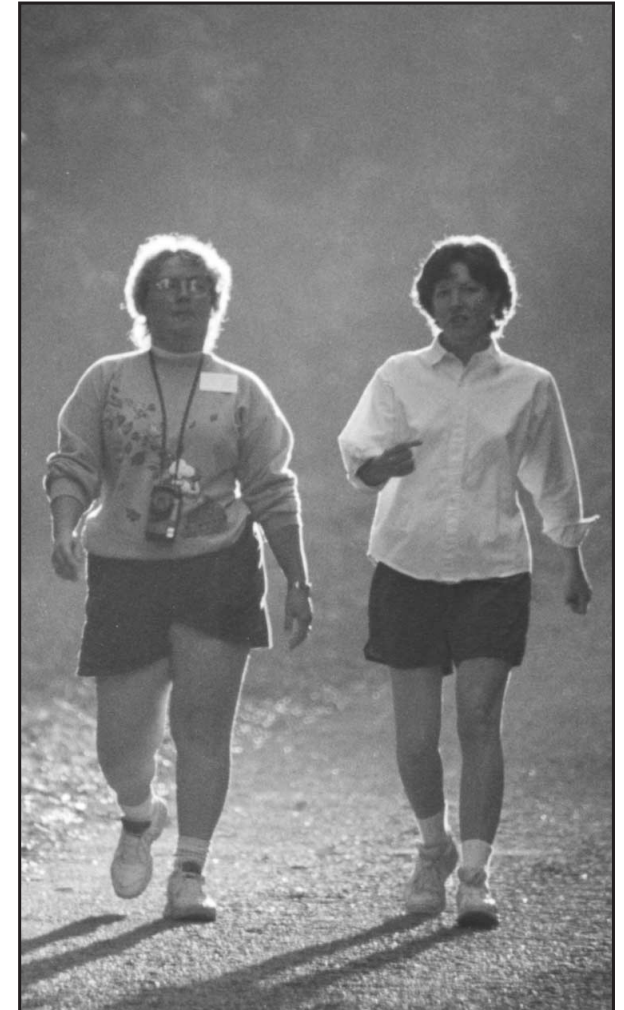
Why the issue matters: Public health traditionally has focused health improvement efforts on personal behavior change such as encouraging people to quit smoking, eat healthy foods, and exercise. It has become clear that a person's health also is closely linked to the health of the community and the environment in which people live, play and work.

Where we are now: DHEC continues to develop partnerships that increase a community's ability to promote healthy lifestyles and protect its environment. A "community" is a group of people with a common interest.

Community organization is a planned process that brings together a diverse group to identify issues and concerns and focus on comprehensive strategies and action steps for health improvement. It is important to focus on each community individually and work primarily through the local structures and values that exist.

For example, a community organization approach would be more successful than a single organization approach in mobilizing a community to eliminate lead poisoning among children living in old housing. By forming a collaboration of health care providers, environmental organizations, neighborhood groups, area schools, day care centers, governmental housing authorities, local businesses, and local media, the problem becomes more manageable. Each group brings resources and strengths to address and solve the problem. Single voices can become a chorus strong enough to effect needed and sustained policy and regulatory changes.

The community organization approach is based on the growing recognition that:



- There is a relationship between health problems and the individual, community and society;
- Behavior is greatly influenced by the environment in which people live;

Increase local capacity to promote and protect healthy communities

- Interventions that target individual behaviors alone do not lead to significant reductions in overall illness and death;
- Change is more likely to be successful and permanent when the people it affects are involved in initiating and promoting that change;
- Large-scale behavioral change requires the people affected by a problem to be involved from the beginning in defining the problem, planning and instituting steps to resolve the problem, and establishing ways to ensure that desired change is maintained; and
- Local people must have a sense of responsibility for, and control over, programs promoting change so that they will continue to support them after the initial organizing efforts.

The link between health and the environment:

Individual behaviors and physical and social environments play major roles in the health of people and communities. The social and physical environments include factors that affect individuals positively or negatively and might not be under their control. The physical environment includes the air, water and soil through which exposure to chemical, biological and physical agents can occur. The physical environment can do harm when individuals and communities are exposed to toxic substances, irritants, infectious agents, and physical hazards in homes, schools and worksites. The physical environment can also support good health through clean water, clean air, safe food, and effective waste management.

The social environment includes interactions with family, friends, co-workers and the rest of the community. It also includes structural components such as housing, public transportation, land use, industry and agriculture. Individuals and their behaviors contribute



to the quality of the social environment. Thus, community health is profoundly affected by the collective beliefs, attitudes and behaviors of everyone who lives in the community.

The challenge: Community partnerships offer challenges and opportunities, particularly when they include nontraditional partners. Partnerships can be among the most effective tools for improving the health of the public and of communities. Partnerships also open new routes for using scarce resources more effectively, bringing the community closer together, reducing high-risk behaviors, and solving community problems.

What we are doing: Some resources are available through DHEC to help communities address specific issues:

- The DHEC Emergency Medical Services Division works in partnership with several groups to develop standards and policies for improvement. **The EMS Advisory Council**, a committee mandated by law and composed of emergency medical service providers including rescue squads, county EMS services, private ambulance services and physician groups, assists the division in this effort. The goal is to assure that communities have the best rapid response to emergency medical needs.

The state currently has 23 designated specialized **trauma centers** to care for injuries (see injury data, page 49). Yet, there are no financial incentives to provide this highly skilled, expensive care. Four South Carolina hospitals in the past several years have reduced or eliminated these services, and others might follow. A 1999 review found that actual costs associated with treat-

Increase local capacity to promote and protect healthy communities

ment, support and follow-up of trauma victims reached \$4 billion in South Carolina and that, in 1998, designated trauma centers lost more than \$16 million because of their voluntary participation in the statewide trauma system. DHEC recently joined in partnership with the S.C. Hospital Association, the S.C. Medical Association, the Trauma Association of S.C., the S.C. Committee on Trauma and the S.C. Chapter of the College of Emergency Physicians to seek statewide support for the state's voluntary trauma system. DHEC's EMS Division also recently completed updating regional trauma plans.

- To help prevent syphilis infection and eliminate it by 2005, DHEC will focus on strengthening community involvement and partnerships. **The Syphilis Elimination Project** delivers mobile screening and treatment services in counties with the highest numbers of cases, responds rapidly to outbreaks, and enhances health promotion, behavioral interventions, and outreach activities involving local communities. The project has developed partnerships with the S.C. African American HIV/AIDS Council to form local community coalitions in Greenwood and Lancaster counties. Local syphilis elimination plans have been developed in Richland, Sumter and Florence/Darlington. Activities will be expanded into other counties.

- **Health and faith** activities initiate health promotion programs in congregations, train lay health advisers, and work with individual congregations to improve the health status and quality of life of members. In December 2001, the 7th Episcopal District of the African Methodist Episcopal Church (AMEC), through the Committee for a Healthy Church, adopted a strategic health plan for the AME Church, the state's largest African American denomination. The vision for the plan is Healthy People, Healthy Congregations

Living in Healthy Communities. The bishop formed a partnership with DHEC Health Services, the S.C. Primary Care Association, the Medical University of South Carolina and various community leaders to address short- and long-term goals and strategies. The AME Church Health Plan goals, as well as the DHEC Strategic Plan goals, feed into the national Healthy People 2010 overarching goals of improving the quality of life for all Americans and eliminating racial and ethnic disparities.

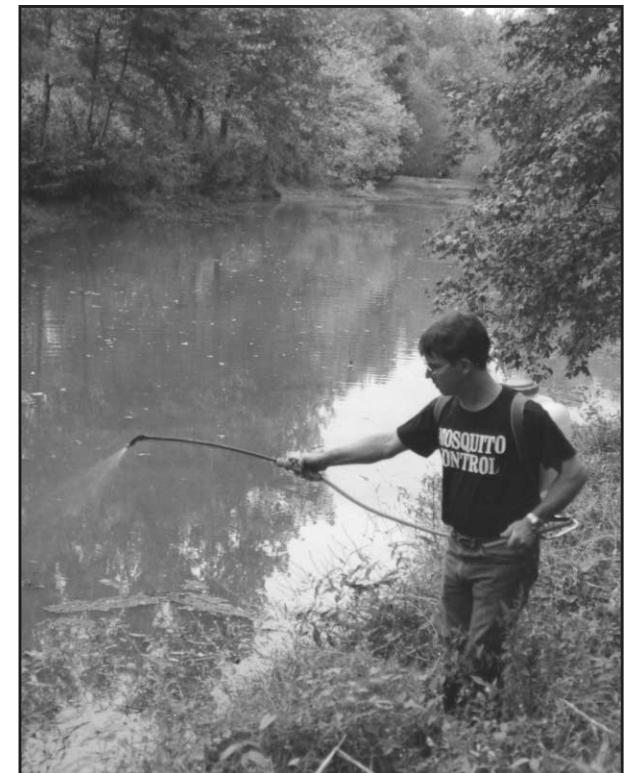
- Because of the increase in the number of **emerging public health threats**, including bioterrorism and West Nile Virus, and because no one knows what new disease will emerge, the public health system must be prepared for the unexpected and ready to address any disease that may pose a threat to the public's health. In 2000, the DHEC Division of Acute Epidemiology was awarded a federal grant from the Centers for Disease Control and Prevention to initiate activities to prepare for an intentional release of a biological agent in South Carolina. Activities in this grant fall within three focus areas:

- 1) *Surveillance and response*, building the capacity of local and state health departments to detect and investigate outbreaks of illness that may have an intentional source.

- 2) *Enhanced laboratory capacity*, expanding the state and local biological capacity to identify agents involved in an unusual outbreak.

- 3) *Health Alert Network*, improving electronic communication networks with the state and local public health departments to rapidly share information among public health officials and external partners regarding unusual outbreaks.

This grant also provides needed epidemiological, technological and laboratory capacity for the state. The benefit of this funding is not limited to solely a potential bioterrorism event. Increasing the public health capacity to respond to an outbreak, regardless of origin, provides resources that have dual uses. Major partners in this effort include the DHEC Bureau of Laboratories, the S.C. Emergency Preparedness Division, the State Law Enforcement Division, Federal Bureau of Investigation, S.C. Hospital Association, hospital emergency departments, and the S.C. Association for Professionals in Infection Control (APIC). For more information: www.scdhec.net/hs/healthalert



Increase local capacity to promote and protect healthy communities

- Forty-three South Carolina communities have been trained in Healthy Communities principles since 1994. These communities represent a diverse group of cities, counties and coalitions. While each follows the Healthy Communities principles, priorities and activities differ. For instance, **The Community Coalition of Horry County** is a network of agencies, organizations, businesses, individuals and government committed to community health improvements. Activities to date have included development of a community resource directory, study circles, youth advisory council and family enrichment programs. For more information: www.horrycounty.com/non-profit/communitycoalition/index.html

- **S.C. Turning Point** is a public/private group that supports community development and planning initiatives. Turning Point currently is working with Orangeburg, Clarendon and Georgetown counties to conduct a needs assessment of community health services, develop health improvement plans, and foster leadership and partnership skills. For more information: www.iopa.sc.edu/turningpoint

- **The S.C. Tobacco Control Program (SCTCP)** is funded by the Centers for Disease Control and Prevention and is currently involved in efforts to eliminate environmental tobacco smoke exposure, encourage quitting among adults, prevent starting smoking and promote quitting among youth; and eliminate the gap in health disparities. The program received some tobacco settlement monies to fund a youth tobacco use prevention educational program targeting teachers and youth throughout the state. The SCTCP continues to fund, expand the capacity of, and otherwise collaborate with 12 local coalitions (youth and adults) and the S.C. African American Tobacco Control Network. Other partners include the University of South Carolina School of Public Health (Youth Tobacco Survey), S.C. Department of Education



In 2001, DHEC's lab conducted more than 400 tests for anthrax, none of which was positive. In 2001, 44 humans, 13 horses, 241 dead wild birds, and 47,642 mosquitoes were tested for West Nile Virus. None was positive

Healthy Schools Program (links with schools, school curricula and policy development) and Circle Park Behavioral Health Systems (Teens 'N Tobacco Leadership Track with S.C. Teen Institute).

Following are examples of health and environment collaborations with communities to address specific issues of concern:

- In 1999, a true **cancer cluster** was identified through analysis of just one year (1996) of cancer incidence data from the S.C. Central Cancer Registry. A cluster of asbestos-related pleural cancers was discovered in the Charleston area. Since pleural cancer is strongly associated with occupational risk, a review was made of the occupations of the cases, and many were found to work in shipbuilding jobs. A collaborative effort emerged to inform and educate citizens living in the community that this did not pose a risk to them.

The Central Cancer Registry was established in 1995 as a resource to residents in their concern for environmental cancer risks. Evaluation of a potential cancer cluster is exactly the sort of question that a central cancer registry is designed to answer. Since the Charleston cancer cluster, the cancer registry has investigated 65 community cancer concerns and has not found another true cancer cluster.

- DHEC began a public health investigation in January 2001 near Simpsonville after learning of high levels of **uranium** in three private wells. While uranium is naturally occurring, it can cause kidney damage. A multidisciplinary team from eight programs within DHEC was created to determine how many wells were impacted, where the uranium was coming from, and the public health problems it could cause. The team included representatives from Appalachia II EQC and Public Health Districts, EQC Laboratories, Health Hazard Evaluation,

Increase local capacity to promote and protect healthy communities

Radiological Environmental Monitoring, Radiological Health, Groundwater Monitoring, and Hydrogeology. The team worked in cooperation with experts from the EPA Region IV office, the Agency for Toxic Substances and Disease Registry, the Centers for Disease Control and Prevention, and EPA's Radiological Laboratory.

EQC tested about 917 private wells and 322 public wells, primarily in the Upstate. About 10 percent of the private wells contained uranium levels above the EPA Maximum Contaminant Level (MCL) of 30 micrograms per liter for drinking water. Only seven public wells exceeded the MCL. DHEC is working with the Governor's Office and state and local officials to provide safe public drinking water to those residents. More funds are needed to accomplish this effort. Since it is unlikely that everyone impacted will be able to access public water, DHEC has completed a study of two treatment systems. Both appear to be effective. Four public meetings were held to discuss the uranium investigation with the communities. For more information: www.scdhec.net/water/html/uranium.html

- **Diseases transmitted by insects**, particularly vectors like ticks and mosquitoes, concern the public. When citizens in a Myrtle Beach community expressed concerns about the deer population and the risks they pose as hosts to ticks, health and environmental staff began investigating the potential health threat. Ticks potentially carry Lyme disease and Rocky Mountain spotted fever.

Like many communities, residents had differing views on the problem and the solution. Some thought the deer herd should be thinned through deliberate "harvesting," and others thought that the deer should be protected.

Environmental and health staff met with the community to hear their concerns and provide information about tick-borne diseases, including information that deer are not a favorite host for ticks carrying Lyme dis-

ease in S.C. After the discussion, DHEC staff and citizens agreed that DHEC would provide written information to the Town Council on the conclusion that reducing the deer population would have little effect on reducing exposure to these diseases. DHEC medical staff also agreed to meet with local physicians to examine disease patterns known to them but not in official reports. Citizens were encouraged to contact the local county health department when they were told they had a tick-borne disease or were being treated for an illness they suspected was tick-borne. Local staff would then make follow-up contacts with the physicians and the DHEC Epidemiology team to determine if something different was happening in the community from the expected picture painted by the disease data and the scientific information. DHEC staff agreed to be available, with other agencies, for a larger educational program if the community desired. Staff continues to work with citizens on this issue.

- **A DHEC environmental outreach group** consists of staff from different programs to promote environmental education in communities. An Earth Day television program broadcast across the nation and targeting elementary and middle school students highlighted the educational projects developed and implemented by the group in the past year. "Earth Day, USA," was done in partnership with S.C. Educational Television. The live, one-hour program offered students the opportunity to share their thoughts and ask questions of a panel on environmental issues. Students from around the state and as far away as Nevada called or sent their questions through a Web site. For more information: www.scdhec.net/earthday

The work group has also developed several publications including an Environmental Outreach Resource Guide, Environmental Outreach Glossary, Environmental Outreach Activity Book, and a special publication pro-

moting the 30th anniversary of Earth Day. In addition, a poster, "50 Ways to Protect South Carolina's Environment," was also developed. For more information: www.scdhec.net/eqc/admin/html/eqcoutreach.html

What you can do:

- Get involved in community forums or organizations designed to identify and address community issues.
- Get trained in the Healthy Communities principles.
- Learn how to lessen your impact on your environment.

Resources:

National Healthy Communities programs
www.ncl.org/ncl/hci.htm

DHEC Emergency Medical Services
www.scdhec.net/hr/ems

S.C. Turning Point Initiative
www.iopa.sc.edu/turningpoint/

DHEC Division of Acute Epidemiology
www.scdhec.net/hs/diseasecont/acuteepi/

DHEC Health Hazard Evaluation
www.scdhec.net/eqc/admin/html/healthhaz.html

Health Alert Network
www.scdhec.net/hs/healthalert

EQC Outreach
www.scdhec.net/eqc/admin/html/eqcoutreach.html

Uranium Project
www.scdhec.net/water/html/uranium.html

Assist communities in planning for and responsibly managing growth

South Carolina is the 10th fastest growing state in the nation. Our population has grown by more than one-half million in the past decade. By 2010, 4.3 million people are expected to live and work in the state. Our communities need to plan for and manage the impact that comes with new businesses and industries, new people and their children, their homes and their automobiles. The state's role is to assist communities in identifying their needs and desires and helping them find resources or effect policies or programs to meet those needs and desires.



Issue: Population growth and its impact

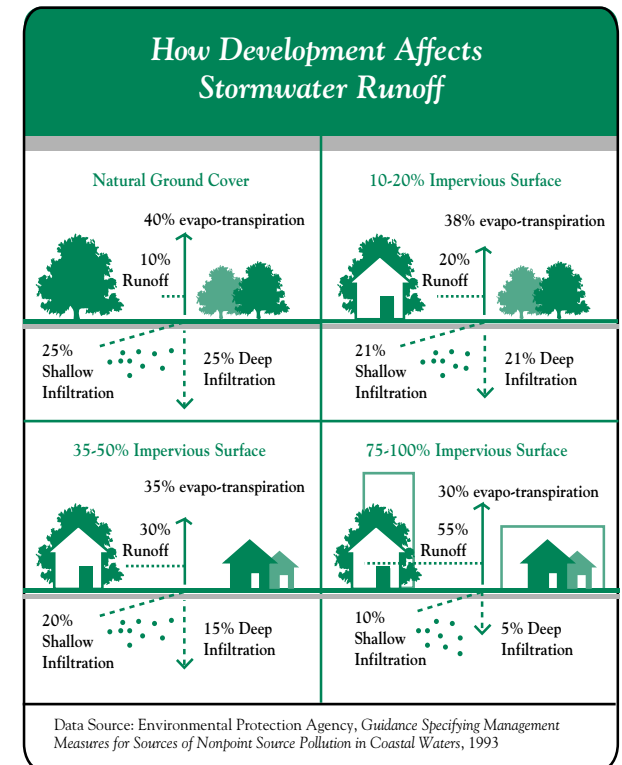
Why the issue matters: There are benefits to growth in South Carolina, but a larger population can have a negative impact on our environment, our public health, and on the quality of life that brings people to South Carolina.

Population growth issues include:

- an increase in **impervious surfaces** such as roofs, parking lots, highways and driveways. Unlike unpaved surfaces that allow rain to soak into the ground, impervious surfaces keep rainwater from restoring groundwater, and they increase flooding and runoff. Stormwater runoff carries pollutants such as oil, gasoline and other automobile byproducts from roads; litter; animal wastes; fertilizers from lawns; and dirt from new construction sites. This runoff goes into the nearest lake, river, stream or estuary, many of which are sources for drinking water. (See page 13 for more information on runoff impacts in coastal areas.) For more information on polluted runoff/stormwater runoff, call (803) 898-4187 or visit the DHEC Web site at www.scdhec.net/water/html/npspage.html

- an increase in **air emissions** from an increase in mobile sources such as cars, trucks and boat engines. Fuel combustion creates gases and chemicals that contribute to harmful ground-level ozone. Added to that toxic mixture are carbon dioxide (a greenhouse gas), carbon monoxide, rubber and carbon particles, and the leaks of fuel, coolant and oil into our air and onto highways and parking lots. Driving a private vehicle is a typical citizen's most common pollution-causing activity.

High levels of ozone at ground level make breathing difficult for people with chronic respiratory illnesses like emphysema and asthma. Low-level ozone may also cause South Carolina to violate state and federal air



quality standards, resulting in the loss of federal highway funds for road construction. For more ozone information, see page 20. For more information about protecting air quality, call (803) 898-3261 and visit the DHEC Web site at www.scdhec.net/baq/ozone/spare.asp.

- **waste management** and ways to dispose of waste. More people means more wastes that must end up somewhere. Contaminants from wastes can end up in the air from combustion, in our water bodies via wastewater treatment, industry discharges and stormwater runoff, or on land at landfills. Without responsible management and reduction of wastes, we could become overrun with

Assist communities in planning for and responsibly managing growth

garbage and waste products.

Where we are now: There is little doubt that growth has come to South Carolina. As the 10th fastest growing state in the United States, population projections show that by 2010 nearly 4.3 million people will live and work in South Carolina.

The link between health and the environment: Poor air quality can cause problems for South Carolinians with chronic respiratory ailments. All of our drinking water comes from South Carolina's lakes and rivers or from the groundwater stored in aquifers beneath the land. When these waters carry too much treated waste and runoff pollution, it is more difficult and more costly for drinking water treatment plants to make the water safe to drink. Safe drinking water is a priority as we grow.

The challenge: Communities must manage the impact that comes with new businesses and industries, new people, their children, their homes and their automobiles.

What we are doing: South Carolinians and DHEC are working toward lessening human impact on the environment:

- South Carolinians **recycled** 1.4 million tons or 31.4 percent of the total municipal solid waste stream in fiscal year 2000. The state began using a new formula that does not allow industrial waste to be included in recycling rates, so the 2000 rate cannot be directly compared to previous years. The latest national rate, however, is 29 percent. In October 2000, the S.C. Solid Waste Policy and Management Act of 1991 was amended with a recycling goal of 35 percent of the waste stream and reducing the amount of waste each person creates per day to 3.5 pounds by 2005. Currently, South Carolinians are generating 4.2 pounds per person per

day. For more information, call (803) 896-4209 or visit www.scdhec.net/eqc/recycle

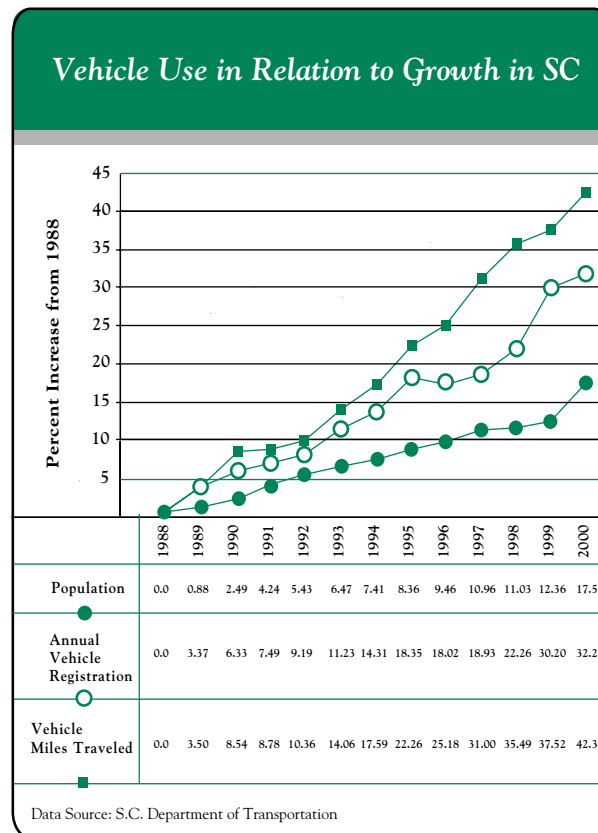
- Old industrial sites and urban buildings often are abandoned for newer facilities in suburban areas where population is increasing. This practice creates sprawl and requires new roads and infrastructure, such as water and sewer lines. That adds to the tax burden. Often, these abandoned sites are excellent properties with adequate roads and water lines. DHEC's **Brownfields** program seeks to encourage the redevelopment of these

properties as a part of a community's plan for responsible growth. Reusing these properties can stimulate economic development in many downtown areas and increase tax revenues while adding jobs where people currently live. Brownfields redevelopment also allows for environmental cleanup that might not otherwise be accomplished. For more information about DHEC's Brownfields program, call (803) 896-4069 or visit www.scdhec.net/lwm/html/site.html

- DHEC supports and works to attain the **U.S. EPA core performance measures** that address improving air quality (ground-level ozone), safe management and reduction of wastes (landfills and recycling), protection of public and ecological health, and reduction of pollutant discharges (impervious surfaces and stormwater runoff, drinking source water protection).

What you can do:

- Recycle newspapers, glass bottles, used motor oil, plastics and cardboard. Teach your children and grandchildren and set an example for them.
- Learn about nonpoint source water pollution. Don't overfertilize your yard. Properly dispose of pet wastes, maintain your automobiles, and report construction sites that don't use proper erosion control methods.
- Conserve water.
- Choose cars that get high gas mileage. Fuel your car after 6 p.m. on hot summer days. Carpool, combine trips, avoid peak driving hours, and work from home when possible.



Assist communities in planning for and responsibly managing growth



Many citizens depend on fish for meals. However, some types of fish in South Carolina lakes and rivers contain pollutants such as mercury and polychlorinated biphenyls (PCBs) that have required DHEC to prohibit or limit fish consumption. These contaminants came from human activities such as burning coal for power generation and manufacturing. For more information on South Carolina fish advisories call (803) 898-4399 or visit www.scdhec.net/eqc/admin/html/fishadv.html

Source Water Protection

Federal law requires each state to establish and implement a Source Water Protection Program to protect both groundwater and surface water sources of drinking water. Because the activities that occur on land can impact the quality of South Carolina's waters, preventing contamination is a cost-effective method for ensuring clean, safe drinking water.

The Source Water Protection Program involves making an assessment of the area around a drinking water source (lake, river or wellhead) and an inventory of potential contaminant sources such as gas stations, dry cleaners, auto repair shops or any other business that uses chemicals. The potential for those contaminants to get into a drinking water source is then analyzed. This information is then provided to local source water protection teams. The teams select a management strategy. Finally, a contingency plan is developed in the event that the public water supply becomes contaminated. A successful Source Water Protection Plan should prevent the need for implementing a contingency plan. For more information: www.scdhec.net/eqc/water/html/htswp.html

Issue: Planning for and managing growth

Why the issue matters: Not only are responsible growth issues and their link to public health important here in South Carolina, but they are also important nationwide. The Healthy People 2010 Leading Health Indicators reflect the major public health concerns in the United States and include concerns about:

- lack of physical activity and obesity (Do communities

have sufficient sidewalks, bike paths and green spaces for families to enjoy?)

- motor vehicle deaths (Do we have sufficient sidewalks and crosswalks in neighborhoods to separate traffic from pedestrians?) and
- environmental quality (We need to reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone).

Where we are now: If we are to grow without harming the environment and our natural resources, we must manage the impact that occurs with growth. In 1994, the S.C. Legislature enacted the **S.C. Local Government Comprehensive Planning Enabling Act**. The act requires governments that use land management tools such as zoning to have a land use plan. This way, local land use decisions follow a plan. Many counties and municipalities already have begun developing land use plans that map out the way these communities want growth to happen. This is an important first step. Many local governments now need to work with their citizens to implement the plans they have in place.

The link between health and the environment: Planning and managing growth can lead to healthier people and healthier communities. For instance, communities can be designed to be walkable, thereby reducing traffic fatalities, pedestrian deaths and automobile emissions while encouraging exercise. Communities also can plan development to be less taxing on the environment. For more information on alternative neighborhood designs, see page 14.

The challenge: Communities must decide what they want growth to be like and then make plans to encourage

Assist communities in planning for and responsibly managing growth



growth in that direction. Communities also must plan for an aging population and consider future health care facility needs. Each of South Carolina's communities is different and has different needs. All communities need technical assistance to plan well and attract and manage the kind of growth that will be a benefit to everyone in the community.

What we are doing: DHEC strongly believes that growth must be managed at the local level. The agency's 2000-2005 Strategic Plan states this belief in its value "Local Solutions to Local Problems" and has adopted as a long-term goal to "Assist communities in planning for and responsibly managing growth."

- DHEC supports and provides technical assistance to communities to develop local approaches to planning for growth and health improvement needs. For more information on DHEC partnerships for community capacity building, read *Increase Local Capacity to Promote and Protect Healthy Communities* beginning on page 3

- To assure that communities have affordable and adequate health care facilities to meet growing and changing population needs, DHEC maintains a **Certificate of Need (CON) program**. The CON program prevents unnecessary duplication of health care facilities and services and guides the establishment of health facilities and services that will best serve public health needs. The CON program is guided by the South Carolina Health Plan, which establishes the need for facilities, beds and services in each area of the state. For more information: www.scdhec.net/Health_Reg/cofn/hrshp.htm or call (803) 545-4200.

- DHEC environmental permitting and regulatory programs assure that industries operate with as little impact as possible on communities' environment and that changes are made if emissions could threaten public health. DHEC also offers a **Center for Waste Minimization** program to help business and industry voluntarily reduce, eliminate or manage wastes. Waste minimization efforts strive to reduce the use of packaging materials, cleaning and rinsing materials and excess raw materials; promote the reuse of waste such as trimmings, rejects and seconds; and encourage recycling items such as chemicals, pallets and cooling fluids. The center offers free, nonregulatory reviews of processes to make them more environmentally sensitive. For more information on DHEC's Waste Minimization program, call 803-898-3971 or visit www.scdhec.net/eqc/admin/html/wastemin.html

- DHEC offers **education programs** to help the public understand the environmental concerns associated with growth. For more information on each, visit www.scdhec.net/eqc/.

- Stewardship programs like **S.C. Water Watch** are available for citizens who want to improve water quality. DHEC's Bureau of Water also offers information on surf water monitoring and shellfish advisories.

- DHEC has a **community liaison** to help communities understand environmental risks.

- **"Spare the Air"** helps residents understand air quality issues and the ways we can reduce ground-level ozone.

- DHEC's Office of Ocean and Coastal Resource Management offers information on **beach renourishment** and **vegetated buffers** to protect water quality.

What you can do:

- Get informed, get involved, and change behaviors that have a negative impact on the environment.

- Attend local planning commission meetings and join groups that foster responsible growth.

Resources:

Smart Growth Network
www.smartgrowth.org

Sprawl Watch Clearinghouse
www.sprawlwatch.org

Land Trust Alliance
www.lta.org

American Planning Association
www.planning.org

National Homebuilders Association
www.nahb.com

Assist communities in planning for and responsibly managing growth



Zoning in South Carolina

A common complaint to DHEC concerns why some business or industry is allowed to operate in a particular location. Zoning and land use planning, however, are local government responsibilities with little, if any, state government involvement. Zoning ensures land uses are compatible. Land use and zoning are not state regulated. DHEC cannot consider compatible land uses as part of the permitting process if there are no local land use laws. If you have questions about existing or proposed land uses adjoining your property, contact your local government officials, who should be able to help you determine what options are available to you to address your concerns. If there are no land use restrictions or zoning, you might have no recourse. Urge local leaders to address land use and zoning before an issue arises. For more information on DHEC's role, see page 27

Water quality regulations strengthened

In 2001, stricter water quality standards went into effect, meaning industries and municipal dischargers must reduce the amount of pollutants including cancer-causing agents in their wastewater. There were also new standards to provide more oversight for runoff pollution. The revisions, proposed by DHEC and passed by the General Assembly, were the most extensive in a decade.

Among the new water rules are tougher standards for:

- pollutants and cancer-causing chemicals, such as arsenic, dioxin and benzene, and toxic metals, such as copper, lead and zinc;
- plant nutrients such as phosphorus and nitrogen that lead to nuisance algae growth; and
- turbidity, or the amount of cloudiness in water, which will allow the agency to better regulate the impact on water from land clearing and development.

Tighter controls on industries' ability to discharge more pollutants when rivers are swollen from rainfall also were passed. DHEC also has reduced the cancer risk factor it uses in setting numeric criteria for pollutants to further protect South Carolinians who depend on fish for meals.

Protect, enhance coastal resources; ensure proper management and access

“The coast” conjures up images of sandy beaches, sea oats swaying in the breeze, and the salty smell of steaming oysters. The state strives to protect and enhance its oceanfront amenities and shellfish harvesting areas so that future generations can experience those same coastal sensations. But protecting coastal resources goes much further than assuring a wide sandy beach for its more than 17 million annual tourists. The coastal ecosystem also encompasses estuaries, wetlands and rivers that must be protected in the face of rapid population growth and development.

Issue: Sustainable coastal development

Why the issue matters: Land available for various habitats decreases as the population grows, leading to the threat of extinction for plant and animal species. Increased development also leads to more pavement, which prevents stormwater from being absorbed into the ground and allows it to pick up contaminants as it flows toward water bodies.

Charleston Harbor Project researchers have determined that water quality begins to deteriorate when 10 percent of the land area surrounding a water body is covered by impervious surfaces - mainly roofs and pavement (see diagram, page 8). At 30 percent coverage, water quality and biological habitats can degrade significantly. (For more information on the Charleston Harbor Project, see www.scdhec.net/ocrm/html/chp.html.)

Overenrichment of coastal waters, particularly from nitrogen, is the most common pollution risk in coastal ecosystems, according to a Pew Oceans Commission report. Stormwater runoff, municipal and industrial discharges, fertilizers and the burning of fossil fuels are the primary sources of nutrients such as nitrogen and phosphorus. Coastal waters are naturally low in dissolved oxygen, and nutrient loads to coastal waters overstimulate plant growth, which further depletes the amount of oxygen in the water available to marine life.

Where we are now: Coastal populations continue to grow at faster rates than populations in other areas of the state. According to the 2000 U.S. Census, 981,000 people - nearly one-fourth of the state’s population - live in the eight coastal counties. Beaufort County topped the state with a 40 percent population increase from 1990 to 2000, followed by Horry County with a 36.5 percent increase.

Conversion of land to urban and suburban uses far outpaces population growth in the nation as well as in the state. Between 1973 and 1994, the population in



Berkeley, Dorchester and Charleston counties increased by 40 percent, while the amount of newly developed urban land area increased by more than 250 percent - more than six times faster than the rate of population increase. Growth management policies and practices are a critical need for coastal cities and counties as well as for the state.

The link between health and the environment: Impaired coastal waters reduce the human food supply of fish. Seventy percent of the nation’s commercially valuable fish spend some critical stage of their life cycle in estuaries. Contact with surf water containing high levels of bacteria can cause human illness.

The challenge: South Carolina’s challenge is to protect its coastal waters from nonpoint source pollution as the population grows.

What we are doing: Residents and communities can reduce the impact on coastal ecosystems through planning and individual actions:

Protect, enhance coastal resources; ensure proper management and access

Stormwater drainage to beaches

South Carolina's Grand Strand is the state's leading tourism destination - a 60-mile stretch of beaches that accounts for about 35 percent of the state's total tourism revenues. So the impact of issuing advisories because of high bacteria levels in the surf is significant. Advisories in the Grand Strand occur because of the system of drainage pipes that dump stormwater on the beach.

DHEC collects surf water samples year-round with emphasis on April 15 through Oct. 15. In 2001, 2,529 samples were collected at 48 permanent and six temporary stations in Horry and Georgetown counties. Routine samples are collected twice a month during the swim season and once a month during cold water months. Samples also are collected after rain, sewage spills, or excessively high tides. Advisories are issued if bacteria counts exceed safe levels. The majority of advisories issued for Grand Strand beaches in 2001 spanned less than one-quarter mile and lasted one day only.

DHEC is working with the cities of North Myrtle Beach and Myrtle Beach, Horry County, the U.S. Army Corps of Engineers, the S.C. Research Authority, and the S.C. Department of Natural Resources to seek federal funds for engineering and urban stormwater management plans for the impacted areas. The \$3.5 million project will produce a design for a drainage system to prevent beach contamination.



- **Alternative developments.** Various alternative development patterns are producing environmental benefits. Neotraditional or “new urbanist” neighborhoods such as Newpoint in Beaufort County have narrower streets and therefore less pavement. These neighborhoods also have higher densities, with clustered housing and smaller lots than conventional subdivisions, so less street frontage is needed per household. “Conservation subdivisions” have lower densities, but also cluster housing so that less environment is disturbed. By building narrower streets, smaller parking lots at shopping centers, and clustering housing while leaving some of the environment undisturbed, damage to nearby water bodies from polluted stormwater can be greatly reduced. These types of new neighborhoods also can offer community docks, reducing the impact of multiple docks on a waterway.

- **Vegetated buffers:** DHEC supports local government efforts to establish vegetated riparian buffers along waterways. Buffers are corridors of native vegetation along rivers, streams, and tidal wetlands that separate upland development from the water. Buffers filter stormwater runoff polluted by fertilizer, pesticides, sediments, lawn clippings, and pet wastes before it reaches a water body. Vegetated buffers reduce downstream flooding by slowing stormwater velocity and storing water in soils. In addition, the deep root systems of trees and shrubs stabilize shoreline soil to reduce erosion along the banks of waterways. Continuous buffers are very effective in protecting the habitat of many species; by capturing and cleaning stormwater runoff before it reaches our waterways, buffers protect coastal fish and shellfish spawning and nursery areas as well as drinking water sources. In South Carolina, Beaufort, York and Chester counties and Mount Pleasant and Charleston have passed buffer ordinances. For more information: www.scdhec.net/eqc/ocrm/clearinghouse/html/landuse-doc3.html.

Protect, enhance coastal resources; ensure proper management and access

- **Special Area Management Plans:** Special Area Management Plans (SAMPs) can identify and propose changes to general coastal zone management policies where local conditions or circumstances make them necessary. The Charleston Harbor Project (CHP) SAMP is a multi-year program of applied research begun in 1991 to help the state and coastal communities better deal with growth issues and protect the region's natural, cultural, recreational and economic resources. The Beaufort County SAMP's primary objective is to protect water quality in Beaufort County and to identify the actions necessary to prevent further degrading of county waters. The Berkeley County Cooper River Corridor Plan is a SAMP created to protect the natural, cultural and recreational resources along the Cooper River. For more information: www.scdhec.net/eqc/ocrm/html/samps.html.

What you can do:

- Preserve or replant native vegetation along the banks of waterways. Landscape so that plants can filter pollutants and slow runoff.
- Landscape your yard with plants native to your area. They often require less water and fertilizer.
- To limit fertilizer being picked up by runoff, do not over-fertilize your yard.

Resources:

Charleston Harbor Project
www.scdhec.net/ocrm/html/chp.html

Land use ordinances
www.scdhec.net/eqc/ocrm/clearinghouse/html/landusedoc3.html

Special area management plans
www.scdhec.net/eqc/ocrm/html/samps.html



Protect, enhance coastal resources; ensure proper management and access

Public access grants

In 2001, the Office of Ocean and Coastal Resource Management awarded \$130,026 in grants to six coastal communities to help improve public access to South Carolina waters. The Coastal Access Improvement Grant is funded through fees charged for permits issued by OCRM. The grants ranged from \$25,000 to Colleton County to help improve two boat ramps to a \$16,276 grant to Folly Beach to construct four new beach access points and additional beach parking spaces. For more information, contact Rob Mikell, (843) 744-5838

Issue: Beach erosion

Why the issue matters: South Carolina's coastal resorts account for more than 60 percent of total state tourism revenues, with Myrtle Beach, Charleston and its surrounding beaches, and Hilton Head rated as the favorite destinations, according to the S.C. Department of Parks, Recreation and Tourism (www.discoverSouthCarolina.com/documentbin/pdf/wttc.pdf). Healthy beaches provide recreation areas for residents as well as 76,000 tourism-related jobs. Healthy beaches provide storm protection, access for recreation, habitat for wildlife, and are a key-stone of the state's tourism industry.

The oncoming ocean can wash away dunes and damage beachfront homes. In addition, since sand dunes provide important habitat and life cycle functions for many species such as sea turtles, they serve multiple purposes in the beach environment beyond their existence as a physical barrier between the ocean and the land.

Where we are now: Erosion caused by storms and other natural and man-made influences on South Carolina's 182 miles of beaches is an ongoing issue for the state.

About 80 percent of South Carolina beaches have a "healthy profile," meaning the dry-sand beach, seaward of the dune, is at least 25 feet wide. Although 2000 was a fairly mild year for beach damage from storms, chronic beach erosion continued at Hunting Island State Park in Beaufort County and Folly Beach County Park in Charleston County. Some of the highest erosion rates anywhere in the state occur along the undeveloped barrier islands, which are losing up to 25 feet per year in places.

About 40 percent of the South Carolina coastline is stable or accreting (growing through sand deposits), about 40 percent is eroding at less than 3 feet per year, and about 20 percent is eroding at more than 3 feet per year, according to Office of Ocean and Coastal Resource Management estimates. For more information on the state of South Carolina's beaches, see www.scdhec.net/ocrm/html/sob301.html.

The challenge: Beach renourishment represents a significant financial cost that fluctuates each year. South Carolina spent an average \$2.8 million each year during the 1990s on beach renourishment projects. After increasing each year from 1995 to 1999, the percentage of healthy beaches has declined slightly. The decline is expected to continue and possibly accelerate with reduced beach renourishment funding.

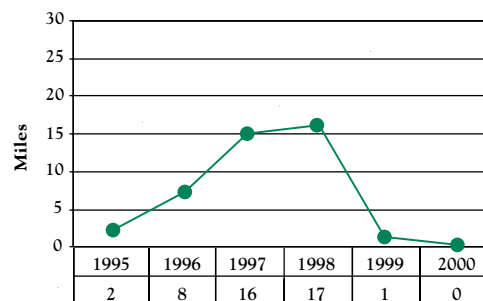
What we are doing: No major beach renourishment projects were begun in 2000, but a large project is currently planned for Hunting Island using approximately \$10 million in state and federal funds to dredge and pump sand from an offshore source. Hunting Island is Beaufort County's only public access beach.

The S.C. Beachfront Management Act requires a reassessment every 10 years of the jurisdictional lines that determine where structures can be built along the beachfront. This "critical line" is necessary to protect a homeowner's or business owner's investment and to prevent erosion that development can cause to a beach. The critical line can move landward, seaward or remain unchanged, depending on how the ocean has changed the coastline. During 2000, beach line revisions were completed for Horry and Georgetown counties. In most areas, the critical lines changed little.

What you can do:

- Become familiar with what erosion control measures help or harm the coast.
- Build a sand dune between private property and the seasonal storm tide line.
- Build crosswalks to keep pedestrians off sand dunes.

Total Length of S.C. Beach Renourishment Projects



Data Source: DHEC Office of Ocean and Coastal Resource Management

Protect, enhance coastal resources; ensure proper management and access

Shellfish

The state assures that the public's health is protected when they eat oysters, clams and mussels, and that sanitary conditions are maintained in the 570,304 acres of shellfish management areas along the coast. A 500-station sampling network provides year-round data, and shellfish beds are closed when heavy rain has the potential to wash contaminants into shellfish waters. For information on shellfish areas, visit www.scdhec.net/eqc/water/html/shellfish.html

Resources:

State of the beaches report
www.scdhec.net/ocrm/html/sob301.html

Issue: Wetlands protection

Why the issue matters: South Carolina has more acres of coastal wetlands than any other Atlantic Coast state. Wetlands play a vital role in flood prevention, the storage and cleaning of stormwater before it reaches our waterways, and in providing important habitat to many species of plants and animals, most of which could not survive outside of wetlands or without the biological services that the wetlands provide. However, these vital wetlands in South Carolina are threatened by development.

If a wetland is filled, it can lead to more flooding in a region because the stormwater storage capability of that wetland will have been lost. Continued ditching around wetlands will lead to a larger loss of wetland acreage on private lands.

Where we are now: Over the past 20 years, the federal government has pledged there will be “no net loss of wet-

lands.” The state is committed to the protection of wetlands as well. However, wetlands are being lost in several ways. Wetlands of less than 1 acre are within the authority of the U.S. Army Corps of Engineers and DHEC's Office of Ocean and Coastal Resource Management (OCRM), but landowners usually are allowed to fill wetlands of this size for land development because they are not large enough to survive the impacts of having development encircle them. However, these wetlands are important because there are many species that can survive only in this habitat. Another way wetlands are being lost is from the ditching of land that surrounds a wetland. By ditching, a landowner can change the hydrology of a site so that in a few years, it no longer qualifies as a wetland and the land can then be developed. The number of wetlands of less than 1 acre in the state and the number being lost are not known.

Last year, the U.S. Supreme Court ruled that the U.S. Army Corps of Engineers does not have permitting jurisdiction over isolated freshwater wetlands. Since South Carolina currently doesn't have any state laws protecting these wetlands, these important ecosystems are in danger of being filled during development, even though several of the wetlands are larger than an acre. Of the 301,877 acres of isolated freshwater wetlands sited by OCRM along the coast, 75 percent of them are over an acre, and more than 24 percent are over 5 acres.

The link between health and the environment: Wetlands protect the health and safety of state residents by keeping our water bodies clean and preventing flooding.

The challenge: Maintaining the current amount of wetlands in South Carolina that protect the state's water and, by extension, its people, plants and animals is necessary, and educating the public on the importance of wetlands is a priority.

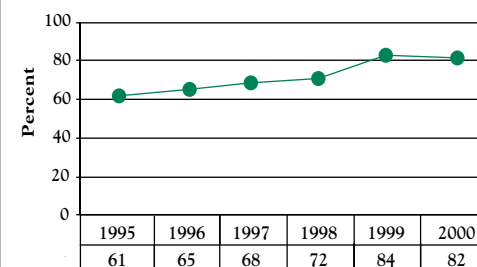
What we are doing: Just how many wetlands that have been lost to ditching is not known, but DHEC and the Environmental Protection Agency are currently working to address the issue.

OCRM has been working with the EPA to identify the illegally filled or ditched wetlands along the coast. This investigation has resulted in fines against violators and the restoration of damaged wetlands.

What you can do:

- When building on your property, preserve small wetlands if possible.
- Talk with neighbors and local officials about preserving small wetlands for the purpose of water storage and habitat protection.

Percentage of Developed Beaches with a Healthy Profile



Data Source: DHEC Office of Ocean and Coastal Resource Management

Protect, continually improve and restore the environment

The quality of the environment is an important factor in describing a healthy community. Air and water quality influence a community's perception of its health. The discovery of contamination can be a shock to any community. The responsibility for protecting these resources has been given to federal and state governments. DHEC, as the delegated authority, is charged with implementing federal regulations along with the directives of the S.C. Legislature. The regulations, guidance, initiatives and programs are ultimately intended to limit the impact of our activities on the environment. Virtually every human activity has an impact on environmental quality, especially when multiplied by our increasing population.

Issue: Watershed Protection

Why the issue matters: A goal of the federal Clean Water Act is for all waters to be classified according to desired or best uses and that standards are stringent enough to protect the uses. Maintaining water quality that can sustain healthy aquatic life and be safe for swimming are Clean Water Act goals.

More development means more people, more sewage, and more pavement and rooftops. These hard surfaces lead to more runoff pollution. As rainfall or other water flows across paved, impervious surfaces, it picks up pollutants that eventually enter streams. Runoff pollution from these hard surfaces and from other disturbed land is called nonpoint source pollution (see diagram, page 8).

Where we are now: DHEC works to protect, restore and improve water quality by focusing our regulatory, monitoring and planning efforts on watersheds. A watershed is the entire land area that delivers water, sediment and dissolved substances to a stream, lake or estuary. Watersheds are nature's boundaries for water resources. When rain falls or when snow melts, water flows downhill over land to rivulets, brooks, wetlands, drains and ditches into streams, rivers and lakes, and eventually into the ocean. Water may also percolate through soil to enter groundwater. As it flows overland, water picks up pollution, sediment and debris.

This movement and physical, chemical and biological processes - including human activities within a watershed - affect the quantity and quality of water when it eventually collects. A watershed must be considered as the complete system of land, plants and animals. The water quality at any point in the watershed impacts the quality everywhere downstream.

While surface waters can take in some pollution, the amount that any water body can accept and still meet water quality standards is limited. DHEC has designated

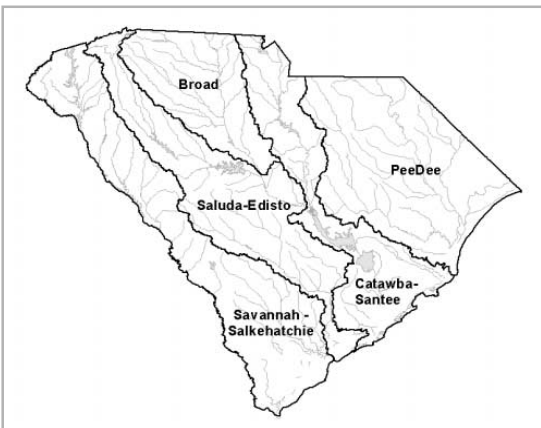


the beneficial uses for all waters and has set standards to protect those uses. The water quality standards identify the safe concentrations of pollutants that can be present and still meet specific water uses. Many waters in South Carolina, especially those in rapidly growing regions, are already at or very close to receiving the maximum amount of waste and still meet water quality standards and be used for their intended purposes.

DHEC has identified all waters where standards are not being met. This document is called the **Impaired Water List**, or 303(d) list, after Section 303(d) of the Federal Clean Water Act and is used to target those bodies of water in the greatest need of protection. The most recent list, finalized in May 2000, has been amended. Visit www.scdhec.net/water/html/tmdl.html to view the list. DHEC must develop a **Total Maximum Daily Load (TMDL)** for each lake, river or stream that does not meet the water quality standards for its designation. The TMDL for each water body must identify the sources of pollution and reductions needed for the water to meet standards. A water quality model can estimate how much pollution a stream can take in before water quality stan-

Protect, continually improve and restore the environment

S.C. Watersheds



Data Source: DHEC Bureau of Water

dards are violated. Based on the model and monitoring data, a water quality restoration strategy is developed. Every two years DHEC revises the list of impaired waters based on the most recent data.

The link between health and the environment: Sixty percent of drinking water comes from surface waters, while 40 percent comes from groundwater. So protecting these resources for human consumption is critical. Approximately 80 percent of waters not meeting state water quality standards are impaired by nonpoint source pollution. When a body of water is included on the 303(d) list, DHEC cannot allow a new discharge to that water unless it will not further lower water quality or until a cleanup plan - a Total Maximum Daily Load - has been developed. If controls are put in place to improve water quality before the TMDL is developed, the water is no longer considered impaired.

The challenge: Progress in cleaning up the state's rivers and lakes has been remarkable since the implementation of the federal Clean Water Act and the S.C. Pollution Control Act. That progress, gained through controls and limits on wastewater treatment plant discharges, is being eroded by the pressure from increased runoff pollution. With the increasing impact of nonpoint runoff taxing the ability of our streams to take in and "assimilate" pollutants, other dischargers may be required to reduce their pollutant loads.

What we are doing: South Carolina uses the watershed approach to protect its waters. This holistic planning approach looks at an entire geographic area and how its land is being used. This approach targets water quality problems by looking at all types of pollution. All watersheds are monitored to assess their water quality. DHEC maintains almost 1,000 stations throughout South Carolina to monitor both water chemistry and biology. The data collected from these monitoring stations is presented in a watershed report, the **Watershed Water Quality Assessment**, which details the watershed health for each individual river basin. These reports provide insight into the needs of a watershed. They describe the condition of a body of water, why these conditions exist, and provide clues to how the conditions can be improved. The Watershed Assessments are updated every five years with each watershed following the cycle of monitoring, assessment and reporting, wasteload allocation, permitting and remediation. The data for the assessments are also used to develop the 303(d) list of impaired waters.

In June 2001, water quality standards were revised and the specific criteria for many pollutants were strengthened, meaning even less wastewater can be discharged into many streams and still meet the standards for the streams' uses (see page 12).

What you can do:

- Get informed, get involved, and learn the simple things

you can do to minimize your impact on nonpoint source pollution (see page 9).

- Attend local planning commission meetings, join groups that foster responsible growth and help make sure that the impacts on your watershed are part of their decisions.

Resources:

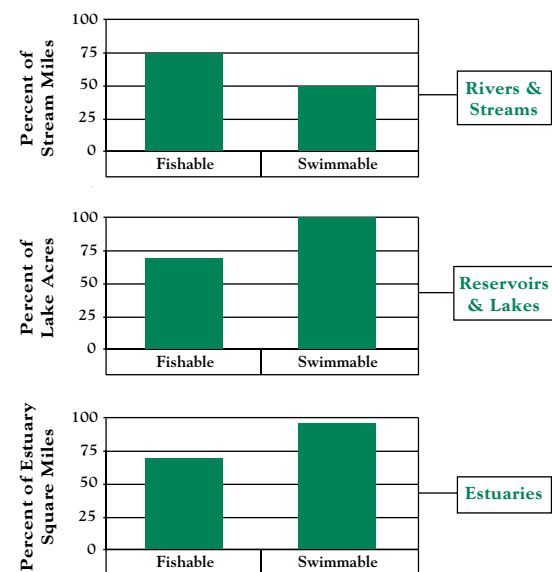
Water quality reports:

www.scdhec.net/eqc/admin/html/eqcpubs.html#Water

The Citizen's Guide to Clean Water

www.scdhec.net/water/html/watershd.html

Percentage of State Waters Fishable and Swimmable*

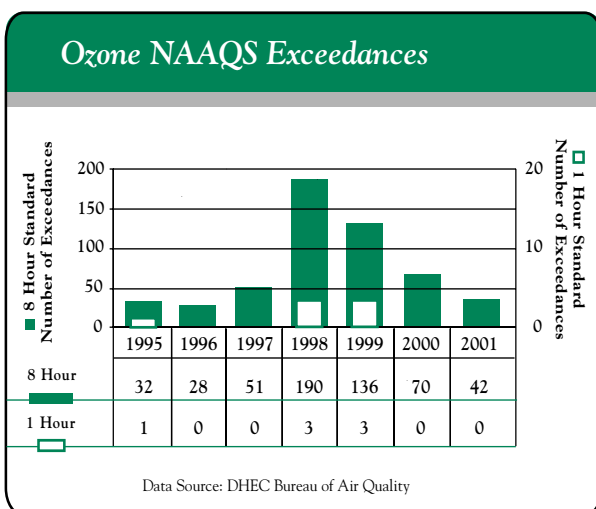


* DHEC's goal is for 80% of all surface waters to support aquatic life and be safe for swimming by 2007

Protect, continually improve and restore the environment

Issue: Ozone

Why the issue matters: Ozone in the air is one of the most significant stressors on the health of the people of South Carolina. During the summer months, particularly during dry, stagnant conditions, ozone concentrations can become high enough to contribute to respiratory infections or lung inflammation and can aggravate pre-existing respiratory diseases such as **asthma**. Other possible effects, such as decreases in lung function, chest pain, and cough, generally occur in individuals engaged in outdoor activities and exertion. Although concentrations are generally at their highest for only a few hours in the afternoon and the effects are reversible, continued exposure can cause premature aging of the lungs and worsen chronic respiratory conditions. Ozone not only acts as an oxidant that inhibits our ability to breathe freely, it can also attack our possessions (particularly rubber and some plastics) and can damage the leaves and health of plants.



Where does ozone come from?

Unlike most other pollutants, ozone is not released into the atmosphere. It is the result of chemical reactions in the air, driven by sunlight and involving chemicals coming from many sources. Volatile organic compounds (VOCs) from sources as varied as drying paint, gasoline from spills and leaks, and even from trees, react with nitrogen oxides (NOX) from the combustion of liquid fuels (fuel oil, gasoline and diesel), solid fuels (coal and wood products), and natural gas. The weather plays an important role, with hot, dry, calm, cloudless days providing the ideal conditions for the reactions to take place before the ozone precursors (the VOCs and NOX) can disperse. The regular afternoon peaks in ozone concentration are primarily the result of the large amount of precursor compounds released during the morning rush hour from hundreds of thousands of automobiles in urban areas. The precursors mix and are carried downwind as the sunlight promotes the complex chain of reactions that produce ozone. Often the highest concentrations are recorded many miles downwind of the urban areas that create conditions that produce ozone.

Using the latest forecasting tools, high ozone days can often be predicted. On days forecasted to have high concentrations, you can help reduce the formation of ground-level ozone:

- Drive less- automobiles are a significant source of nitrogen oxides and VOCs, which create ground-level ozone.
- Carpool - it is especially important to reduce the morning commute.
- Shop by phone, mail, or the Internet, or telecommute if you can.
- Ride public transit where available.
- Combine your errands into one trip. Plan ahead and save time and money.
- Fuel up in the afternoon and avoid adding more VOCs to the morning mix.

In South Carolina, a majority of air pollution comes from cars and trucks. Even though cars and trucks run 90 percent cleaner today than they did in 1970, we are driving more miles than ever before, and this offsets the advantages gained from "cleaner" technology.

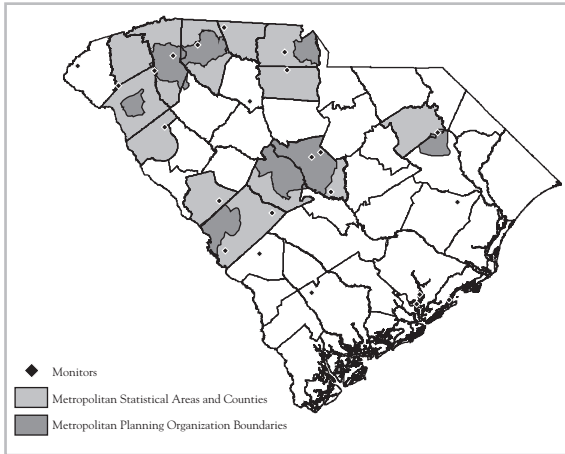
Where we are now: South Carolina meets the state and National Ambient Air Quality Standards (NAAQS) for ozone. These standards are set to protect our most susceptible populations, most often the very young and the elderly, from the adverse effects of the six most common pollutants. How each standard is calculated is reviewed every five years to ensure that it is based on the latest knowledge of the health effects (for the primary standard) and the effects on property, agriculture and ecosystems (for the secondary standard).

The standard is based on the one-hour peak concentration monitored each day. South Carolina's ozone

air concentrations are monitored continuously at 23 stations that represent urban, suburban, rural and near pristine areas. While there have been measurements over the standard in recent years, they did not constitute a violation.

There is also a more conservative standard that uses an eight-hour averaging period. The eight-hour standard is based on the latest review of published health studies. This standard is not in effect because it is being challenged in court, but comparing air monitoring data to the new standard shows that some areas of the state may not be able to consistently meet the standard. While this stan-

Potential Ozone Nonattainment Boundaries



Data Source: DHEC Bureau of Air Quality

dard is not being enforced, DHEC continues to monitor and inform the public of eight-hour ozone concentrations.

In June 2000, even with the uncertainty surrounding the eight-hour ozone standard, the U.S. Environmental Protection Agency required the South Carolina governor to submit proposed boundaries for areas that would not meet the eight-hour ozone standard based on data from 1997 to 1999. When an area is declared in “**nonattainment**” for an ambient air standard, it is the responsibility of the state to propose a State Implementation Plan (SIP) describing what will be done to meet the standard. The most likely nonattainment areas include the Midlands around Columbia, the Greenville /Spartanburg area in the Upstate, and an area shared with Georgia that includes Aiken and Augusta. Areas around Rock Hill, Florence and Anderson where the standard was exceeded were also submitted.

The link between health and the environment: Ozone is one link between the pervasive effects of urban sprawl and the health of people. Ozone concentrations are caused by weather conditions and chemical compounds in the air. We can’t do much about the weather, but we can have a real effect on the latter by how and when we travel and how we let our communities grow. The way we build our communities can have an effect on the health of the people who live in them. Sprawl requires traveling farther. Replacing mature trees with concrete, asphalt and buildings raises temperatures and can lower humidity in urban areas (and speed ozone production).

The challenge: The decisions we make now about how communities and the state manage the contributors to ozone can affect our ability to meet air standards and protect our health. The way we allow our communities to grow and the availability and use of mass transit can have a real and lasting effect on air quality. Communities need to continue to plan their growth to allow and encourage mass or alternate forms of transportation or even eliminate the need to burn fuel to get around. The best approach to standard violations and the potential health and nonattainment burdens is to avoid them altogether. Any steps that can be implemented now to promote and encourage actions that reduce ozone concentrations could lower the cost for health care, transportation, industrial growth, and government oversight.

What we are doing: DHEC’s Bureau of Air Quality is approaching high ozone concentrations from three main directions:

- **Reduction of precursors** - In South Carolina about 80 percent of NO_x emissions are the result of fuel combustion by industry (37 percent) and transportation (42 percent). The Air Program is implementing nationwide NO_x emission reduction programs in South Carolina that

should significantly reduce emissions from industrial sources beginning in 2004. For VOCs, industrial processes account for 10 percent and transportation 24 percent of the emissions. In the South, biogenic sources (trees and plants) contribute approximately 48 percent of the available volatile compounds. It’s obvious that motor vehicle use plays a significant role. DHEC cannot affect motor vehicle emissions directly, but through supporting national standards for cleaner fuels and better automobile emission control devices we can help reduce mobile source emissions in the future.

- **Education and Awareness** - DHEC helps get the word out that mass transportation and alternately fueled vehicles are not only economical and relatively clean, but can be practical and healthy. DHEC is setting the example by including in its fleet an increasing percentage of dual-fueled and hybrid vehicles. The Air Program continues to promote the installation of an infrastructure to provide alternative fuels such as compressed natural gas and ethanol for use by both state government and the citizens of South Carolina. In the summer, Bureau of Air Quality meteorologists work with their counterparts in neighboring states to provide ozone forecasts for urban areas. When conditions are ripe for ozone production, an **Ozone Alert Day** may be declared so that individuals with asthma and other respiratory conditions can limit their exposure to higher ozone concentrations and to remind everyone what they can do to minimize their impact by driving less, refueling vehicles after 6 p.m., and mowing lawns another day since pollution from these activities contributes to the formation of ozone.

- **Planning** - DHEC has been collecting information from industry and other state and federal organizations that will be used to develop a plan to reduce emissions to meet the eight-hour ozone standard. Formal activities will not occur until the U.S. EPA finalizes implementation

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requirements and begins the process for designation of nonattainment areas. A major effort in any ozone SIP planning process is the development of a model to test the effects of different emission reduction approaches to the control of ozone precursors. The Bureau of Air Quality has been working to have this sophisticated simulation ready and tested for use when the issues surrounding the eight-hour ozone standard are resolved. The Bureau has also been active in regional and national organizations to make sure that South Carolina's and the Southeast's perspective, experience and expectations are heard in the development of approaches to what is, in many ways, a regional problem.

What you can do:

- Be aware of the conditions and activities that can contribute to elevated ozone concentrations. When an ozone alert is issued, minimize your contribution to the problem. There are many simple things individuals can do to help reduce the concentrations of precursors every day and especially when the conditions are right for ozone formation. For ways to lessen your impact: www.scdhec.net.
- Be involved in the planning decisions of your community. Decisions that impact what kind and how much transportation is needed to travel to work and to shop can affect environmental quality in the community.
- Most importantly, if you or a family member has asthma or other respiratory conditions, be aware of ozone alerts and take appropriate action to limit exposure.

Issue: Fine Particulate Matter and its impact on health

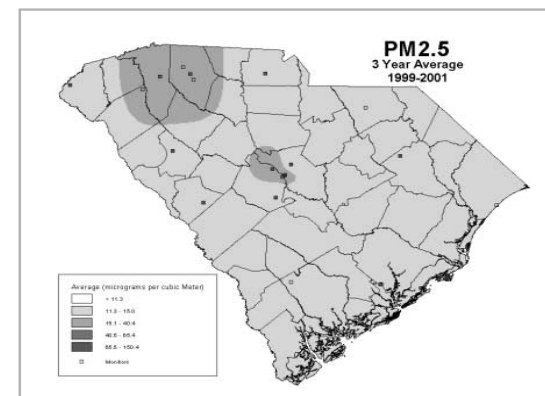
Why the issue matters: Fine particulate, which can penetrate deep into the lungs, can contribute to decreased lung function, change lung tissue and structure, and alter respiratory tract defense mechanisms. At higher concentrations, susceptible individuals, primarily the elderly with decreased heart and lung functions and children with asthma, may experience increased respiratory symptoms.

Even at lower concentrations, fine particulate impacts what we can see. The haze in the Smoky Mountains and on the seashore is produced by light scattered by these fine particles. In the mountains it is primarily sulfates and moisture; on the shore, fine salt particles contribute to decreased visibility.

Where we are now: In 1997, after review of the latest available information, the U.S. Environmental Protection Agency revised the **National Ambient Air Quality Standard (NAAQS)** for particulate matter. The revision reflects the latest national health studies that indicate particulate less than about 2.5 microns in diameter (a little smaller than a particle of flour) has the most significant health impacts. For the last 20 years, the standard and control efforts have been focused on particles less than 10 microns. The PM10 standard has been met throughout South Carolina. There have been measurements above the annual average, but those sites were impacted by unusual conditions including South Carolina's continuing drought, local construction, and unusual weather conditions. All those sites are currently meeting the standard.

Little was known about the air concentrations of fine particulate at the time the standard came into effect. Only one monitoring site was operating in South Carolina. This site was located in the Cape Romain National Wildlife Refuge and was operated by the National Wildlife Service as part of the national Interagency

Particulate Matter



Data Source: DHEC Bureau of Air Quality

Pollution knows no boundaries, and as the individual sources within the state have come under greater control, the transport of pollutants across state and regional boundaries has become a more important issue. Environmental Quality Control staff is involved in regional approaches to pollution control through participation in regional and national organizations including:

Environmental Council of States (ECOS)
www.sso.org/ecos/

Southeast States Air Resources Managers
Visibility Improvement State and Tribal Association of
the Southeast (VISTAS)
www.vistas-sesarm.org/

Southern Appalachian Mountains Initiative (SAMI)
www.saminet.org/

The State and Territorial Air Pollution Program
Administrators (STAPPA)
www.cleanairworld.org

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Monitoring of Protected Visual Environments (IMPROVE) network. That data indicated average concentrations in a relatively clean and protected environment were below, but close to, the new annual standard. (For more about IMPROVE visit <http://vista.cira.colorado.edu/improve/>).

Since 1997, DHEC has deployed 21 samplers and seven monitors at 24 sites to find out what concentrations of fine particulate are throughout the state. The initial data is showing concentrations in the coastal areas to be generally below the annual standard and that there will likely be difficulty meeting the standard in urban areas and in the Upstate.

The link between health and the environment: As a pollutant, fine particulate is, in many ways, similar to ozone. It is generally not directly discharged or emitted by sources. Chemical reactions and physical processes in the atmosphere create most fine particulate. The growth of the particles takes time, so peak concentrations are often some distance from the sources that cause them. Many of the reactions, and some of the precursors, are the same for ozone and fine particulate. The daily and annual variations in concentration often track each other, with concentrations peaking during the day and generally higher in the summer months. Particulate matter is unlike ozone in its ability to persist and remain suspended for long periods. It is not unusual for dust from northern Africa to be collected in the southeastern U.S. The health effects connected with fine particulate are also similar to those connected with ozone exposure.

The challenge: Concerns about fine particulate are relatively new, and details about the chemistry of the particles, physical properties, sources and effects are the subjects of extensive research. DHEC's first two years of monitoring have provided information about concentrations, but just knowing that there is a problem is only the first

step toward eliminating it. The data from 2001 showed that weather is an important factor. Concentrations were lower than in 2000, much like the decrease seen in ozone concentrations. The data from other southeast and eastern states confirms that the problem is regional and national in scale. It will take concerted effort across large areas of the nation to address precursor emissions and particulate concentrations.

The U.S. EPA has not yet provided details of implementation, guidance for addressing the concentrations nationwide, or the model for state permitting programs. However, multistate regional groups have been formed to work on visibility goals, and their work is expected to be crucial when forming uniform ways to reduce particulate concentrations. The Air Program is actively involved in the Visibility Improvement State and Tribal Association of the Southeast (VISTAS), a regional planning organization working on visibility issues.

What we are doing: In the three major urban areas of Charleston, Columbia, and Greenville/Spartanburg, DHEC is now collecting regular samples to analyze the makeup of fine particulate. There is also a sampling site in rural Chesterfield County. Early results from the Charleston samples are consistent with data collected at the Cape Romain IMPROVE site and across the Southeast. They are showing the major components to be sulfates and carbon. As data is collected over the next few years from these and other Southeastern sites, we will have a better idea of what makes up particulate from the coast to the mountains and from urban to rural areas. A control strategy will depend on these samples and additional work being done by the southeast regional planning organization. Some controls on important precursors are already in place. The sulfate that makes a significant part of the Eastern particulate comes, in large part, from sulfur dioxide (SO₂) emitted from the combustion of coal that contains sulfur. The efforts to address acid rain that led to

reductions of SO₂ emissions may have already contributed to a general downward trend in concentrations in the eastern states.

What you can do:

- Large industry is not the only source of the precursors of fine particulate. The same nitrogen oxides that play a part in ozone production contribute to particulate formation. Much of the carbon seen in the samples is also from motor vehicle emissions. The same actions you can take to reduce your contribution to increased ozone concentrations can lower particulate concentration peaks. (See page 22.)

Resources:

Environmental Council of States (ECOS)
www.sso.org/ecos/

Southeast States Air Resources Managers Visibility Improvement State and Tribal Association of the Southeast (VISTAS)
www.vistas-sesarm.org/

Southern Appalachian Mountains Initiative (SAMI)
www.samnet.org/

The State and Territorial Air Pollution Program Administrators (STAPPA)
www.cleanairworld.org

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Issue: Environmental problem investigation and response

Why the issue matters: Investigation, analysis and response to environmental problems often require a variety of techniques. An investigation may include collecting and analyzing soil, surface water, groundwater and drinking water samples to define the extent of the contamination and impact on private wells. Air samples may be taken in, under and outside homes. The results are used to design and choose the best course of action to protect the health of community residents, identify the source, and if possible, stop the spread of the contaminant.

Much of the funding to support investigation and cleanup of contaminated sites and respond to immediate needs is gone. Until it closed, the Pinewood Hazardous Waste Landfill paid a fee for materials it accepted for disposal. That funding, which began in 1980, contributed to environmental protection activities. Since 1986, almost \$28 million has been spent from the **State Hazardous Waste Contingency Fund (State Superfund)** to identify, investigate, stabilize and clean up contaminated sites.

Where we are now: In the last several years there have been some extraordinary events that have challenged DHEC's capability to respond to immediate environmental threats. The release of **organotin** compounds into Red Bank Creek and the potential for release from a related facility in Richland County eventually required the 24-hour presence of DHEC personnel for almost three months to ensure that processes and material handling at the facilities were controlled properly. That investigation, along with unrelated groundwater contamination in the Hollis Road area of Lexington County and months of investigation of the extent and severity of naturally occurring uranium in the Upstate, has required hundreds of



samples to be collected and analyzed. Personnel from throughout Environmental Quality Control (EQC), the DHEC laboratory in Columbia, and contract laboratories are used in the investigations and need to maintain the ability to respond to concerns.

The link between health and the environment: The discovery of contamination in a small community or watershed raises immediate concerns about the exposure of residents, the possible health effects, and impact on the environment. The ability to quickly investigate, define and reduce the effects of existing or new contamination is essential to being able to protect the health of the community and the quality of the environment.

The challenge: There is a continuing need to maintain the capability to respond to newly discovered environmental problems, investigate existing contamination, and support contamination cleanup. The loss of fees that have supported these activities endangers the state's ability to respond to all of these needs and meet public expectations. Accidents will continue to happen, and not every contaminated site has been discovered.

What we are doing: DHEC has asked the Legislature to support its ability to respond to and address contamination through appropriations and/or increasing existing fees for the incineration of hazardous waste in the state. Where a responsible party can be identified, DHEC attempts to recover the costs associated with investigation and cleanup. When those responsible for a problem cannot be found or if they cannot pay for necessary cleanup, the Hazardous Waste Contingency Fund is a primary source of cleanup money. The fund also supports the assessment and cleanup of sites that may not pose an immediate threat to communities and also supports the Brownfields/Voluntary Cleanup programs.

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DHEC also has laboratories that can analyze a variety of environmental contaminants in air, water and soils. EQC personnel throughout the state are trained to respond to emergencies ranging from diesel fuel spills to the discovery of drums containing possibly hazardous material to chemical spills and fires at facilities that use potentially hazardous material. In addition, EQC personnel familiar with a material or process are often called in to assist in assessing and monitoring the threat. For skills and capabilities beyond those the agency can reasonably support, DHEC maintains contracts with companies that can do specialized analysis, cleanup and disposal of hazardous materials.

What you can do:

- Report the dumping or discovery of unusual or suspicious materials to DHEC. The toll-free 24-hour DHEC Emergency Response number to report chemical spills, oil spills, or fish kills is 1-888-481-0125. If the occurrence is not an emergency, please call the local EQC District office. For a list of district offices, see inside front cover. Visit www.scdhec.net/lwm/html/reporting.html or call the local EQC District office for additional information.

Funds dwindle for emergency response

Until it closed, the Pinewood Hazardous Waste Landfill paid a fee for materials it accepted for disposal. That funding, which began in 1980, contributed to environmental protection activities. Since 1986 almost \$28 million has been spent from the State Hazardous Waste Contingency Fund (State Superfund) to identify, investigate, stabilize and clean up contaminated sites.

In the last several years the Hazardous Waste Contingency Fund has been used to support DHEC's efforts to address groundwater contamination at Hollis Road and South Lake Drive sites in Lexington County. This groundwater contamination covers more than two square miles in Lexington County near the Redbank community. Over the last three years DHEC has:

- constructed approximately five miles of new waterlines;
- provided a public drinking water supply to more than 400 residents;
- conducted nine public meetings; and
- collected more than 800 environmental samples to determine the extent of contamination.

Funds spent to date total \$2,904,144.

In other projects DHEC has

- excavated and disposed of 2,600 cubic yards of lead contaminated soil at a low-income mobile home park in Greer where several children's blood tests showed high lead levels (\$172,937);
- treated and disposed of 40,000 tons of contaminated material at a site in Charleston County (\$2,876,218);
- excavated and disposed of more than 4,000 buried drums and containers at a site in Simpsonville (\$4,162,626);
- supported actions at 19 Brownfield redevelopment sites; and
- initiated four cost recovery actions in federal court to recover past costs in excess of \$5 million and to seek a declaratory judgment for future costs of additional cleanup at these sites from the responsible parties that is estimated to exceed \$10 million.

The Hazardous Waste Contingency Fund was used when DHEC issued emergency orders closing two facilities, Cardinal Chemicals located in Richland County and Tin Products located in Lexington County. To date, DHEC has incurred expenses of about \$175,000 at Cardinal and \$8,000 at Tin Products. The U.S. EPA is presently performing cleanups at both facilities; however, their current actions are limited to surface cleanup. Long-term cleanup of contaminated groundwater will most probably be the responsibility of DHEC and this fund.

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Issue: Reusing abandoned industrial sites

Why the issue matters: Land is a resource that can be used, misused and wasted. Restoring and reusing abandoned and possibly contaminated industrial sites is an important way to recycle land. When an industrial facility closes, the potential for contamination, waste and liability can persuade new industry to pass up good locations and move to cleaner and greener pastures. **Brownfield redevelopment projects** make it possible for unused industrial sites to be cleaned up and returned to productive use. As a byproduct, jobs are created (or re-created), the new facility gets the benefit of the existing infrastructure, and existing undeveloped land (greenfields) is preserved.

Where we are now: In May 2000, Gov. Jim Hodges signed the Voluntary Cleanup Program/Brownfields legislation. Even before the law was in place, 13 facilities had entered into contracts with DHEC to clean up and return industrial and commercial sites to reuse. Since the law was enacted, six additional facilities have entered into Brownfields contracts. Six sites have received certificates of completion, representing 423 acres that have been cleaned up through the Brownfields program. Of these, two housing developments have been built, and three sites will be developed for recreational space.

The link between health and the environment: Communities can help rebuild their commercial and industrial centers, remove or mitigate existing pollution or contamination problems, and minimize sprawl. Often an industry can be the backbone of a community. The availability of jobs in clean and responsible industries can not only improve the health of the local economy, but also the health of the community and its residents by removing contaminants that might not otherwise be cleaned up.



The challenge: Finding and working with new and existing industry and state and local governments to match needs with sites is difficult and time consuming. Ensuring that resources are available to evaluate sites, coordinate community meetings, provide technical assistance and oversee projects requires a reliable funding source and imagination and work to find additional alternative funding sources.

What we are doing: South Carolina's Brownfields/Voluntary Cleanup Program is recognized by U.S. EPA Region 4 as one of the best in the Southeast. For the past two years, a Brownfield site in South Carolina has received the Phoenix Award for U.S. EPA Region 4 and has been a finalist for the national award. The Phoenix Awards honor individuals and groups that have implemented innovative, yet practical, programs that remediated environmental contamination at Brownfields sites and simultaneously stimulated economic development and job creation or retention.

DHEC works on approximately 100 sites a year in the site assessment and remediation program; however, this

program maintains a list of more than 600 sites that are contaminated or potentially contaminated by hazardous substances.

What you can do:

- Encourage and participate in the development of community plans to revitalize abandoned, idled or underused industrial or commercial facilities. A variety of U.S. EPA grants and loans are available to local governments to help assess and develop projects.

Resources:

DHEC's Brownfields program
<http://www.scdhec.net/lwm/html/site.html>

Bureau of Land and Waste Management's Division of Site Assessment & Remediation in Columbia
(803)-896-0469

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Issue: DHEC's regulatory role

Why the issue matters: Individuals and communities often misunderstand DHEC's role in the location and operation of an industrial facility. DHEC does not have a say in where an industry can locate. Its environmental programs are required to evaluate the technical merits of the permit application and compare the operation and the expected emissions and discharges against what is allowed under the law.

A community that wants to plan and manage its growth must recognize the appropriate use and limits of resources. As the environmental regulatory agency, DHEC is bound by existing regulations and laws in its ability to grant, modify or deny permits to operate or build a facility. **Land use planning and zoning** are areas where the community needs to plan for growth. Local governments can best determine if the community is served by the construction and operation of a new facility and must have the necessary growth management tools in place before they are needed.

Where we are now: DHEC is the state agency responsible for the administration of state and federal environmental regulations. When Congress enacted federal laws like the Clean Water and Clean Air Acts, it intended that the states would implement them. Those laws, and the related rules and guidance, define environmental quality through standards and set regulatory requirements and implementation goals to be met. Few goals involve eliminating pollution, but generally focus on controlling sources and reducing concentrations below health-based thresholds, both for humans and ecosystems. The primary ways to control pollution are to issue permits to pollution sources and ensure they comply with rules and limits; enforcement actions, if necessary; and monitoring to see if the efforts are having the desired effect. DHEC has demonstrated the ability to administer the environmental programs effectively and has been delegated that authority by the U.S. Environmental Protection Agency.

The link between health and the environment: Poor environmental quality can limit the ability of a community to develop the way it wishes. It imposes greater burdens on its citizens and health care systems and disproportionately affects the oldest and youngest citizens. As in most every health issue, prevention is easier, less expensive and less stressful than treatment and cure. For the community, the elements of prevention are knowledge, planning and awareness.

The challenge: Communities need to be aware of the different roles state and local governments can play in land use, development and economic growth. DHEC has many resources available to communities to help them become, or continue to be, healthy communities. Publications like the *Environmental Permitting Handbook* and *Citizen's Guide to Clean Water* provide information on the processes of governmental environmental protection. Permit application lists are published on the DHEC Web page (www.scdhec.net/eqc) under Permit Application Status. Additional details of the permit application can be obtained through the Freedom of Information Center (www.scdhec.net/foi) or (803) 898-3882.

What we are doing: All of DHEC's environmental programs conduct public outreach activities on general issues, regulation and plan development, and on specific permit activities. DHEC announces public comment opportunities on its Web site and in local outlets. Communities and individuals can provide their comments and opinion in person or in writing on any of the issues. The DHEC Web site has information about environmental programs, the regulations behind them, and contacts within the agency.

What you can do:

- Get informed, get involved, and encourage your community leaders to plan for change.

- Attend and participate in local planning body meetings.
- Join and support groups that foster responsible growth.

Resources:

Environmental Permitting Handbook
<http://www.scdhec.net/eqc/>

Citizen's Guide to Clean Water
www.scdhec.net/eqc/water/pubs/citgd.pdf

DHEC Freedom of Information Center
www.scdhec.net/foi

Cooperation will lead to river, lake improvement

Environmental officials from the two Carolinas, the City of Charlotte, N.C., and Charlotte-Mecklenburg Utilities reached a settlement in January 2002 to improve water quality in the Catawba River Basin.

The agreement will result in a 70 percent reduction in phosphorus discharged from Charlotte-Mecklenburg Utilities' McAlpine Creek Wastewater Treatment Plant and two smaller plants in southern Mecklenburg County near the South Carolina border. Discharges enter creeks that feed the Catawba River and ultimately Lake Wateree.

Phosphorus is a nutrient in wastewater discharge that can overfertilize water bodies, causing algal growth that uses up dissolved oxygen fish need to live. The Catawba has been named an endangered river because of excess pollution and receives about half its phosphorus load from Charlotte.

The agreement, a five-year, \$47 million commitment by Charlotte-Mecklenburg Utilities, resulted from DHEC's legal challenge to the utility's wastewater operating permit issued by the N.C. Department of Environment and Natural Resources. Water quality in the lake and river should improve by 2010.

Improve health for all and eliminate health disparities

Promoting healthy behaviors and assuring preventive health care are vital components of improving health for all. When diseases appear more frequently in one population than in another, they must be identified and addressed if we are to improve health for everyone in South Carolina.



Issue: Improving the health of South Carolinians

Why the issue matters: The overall health of South Carolina's population is one indicator of quality of life in the state. Our perceptions of our physical and mental health and our surroundings help South Carolina and its communities develop policies, services and interventions to address residents' unmet health and environmental protection needs, and evaluate the effectiveness of the interventions or programs already in place. Tracking our progress toward the Healthy People 2010 goals allows us to focus our partnership efforts and resources on reachable goals to attain health improvements.

Where we are now: In state-by-state comparisons of health, South Carolina often ranks poorly. The social, economic and educational components that affect the health of a society disproportionately affect our largely rural population.

In the Centers for Disease Control and Prevention's (CDC's) most recent state rankings (1999), South Carolina ranked:

- First in stroke deaths;
- Ninth in diabetes deaths;
- Ninth in prostate cancer deaths;
- 18th in heart disease deaths;
- 21st in the percent of population that is overweight or obese;
- 25th in cancer rates; and

Overweight and Obesity

For the vast majority of people, excess weight and obesity are caused by eating and drinking too many calories and not getting enough exercise. Unhealthy eating habits such as high fat diets and low intake of fruits and vegetables, along with sedentary lifestyles, account for about

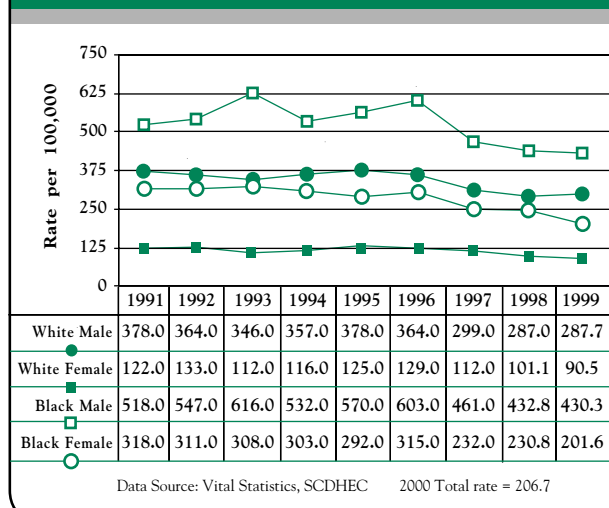
300,000 deaths each year in the United States. Overweight and obesity are associated with an increased risk for coronary heart disease, type 2 diabetes, stroke, gallbladder disease, osteoarthritis, sleep apnea, breathing problems, and certain cancers, according to the 2001 Surgeon General's *Call to Action to Prevent and Decrease Overweight and Obesity*.

South Carolina suffers from high rates of overweight and obesity. The percentage of obese (those more than 30 pounds overweight) South Carolinians has steadily risen over the past decade, with a jump from 16.1 percent in 1990 to 21 percent in 1999. In 2000, one in five (22 percent) South Carolinians was obese. The national goal is no more than 15 percent. According to a 1998 study of obesity in South Carolina:

- Overweight and obesity affect more men (60.1 percent) than women (46.7 percent)
- Rates of overweight and obesity are highest in minority groups, affecting approximately 65 percent of African Americans, 51 percent of Hispanics, and 64 percent of Native Americans. The Caucasian rate is 49.2 percent.
- People ages 50-59 have the highest rates, followed by people 60-69. South Carolina's rates are higher than the national rates for every decade of life from age 20-69.
- Residents in medically underserved areas face the highest rates (56.3 percent). Rates in the Pee Dee are higher than in the Piedmont, Midlands or Low Country.
- Obesity-related conditions cost South Carolina an estimated \$177 million in 1997. An estimated \$21 million in Medicaid dollars were spent on obesity-related conditions in 1998.
- Nationally, in 1995, the total (direct and indirect) cost of obesity was an estimated \$99 billion dollars. (In 2000,

Improve health for all and eliminate health disparities

Heart Disease Mortality Rates, Ages 45-64

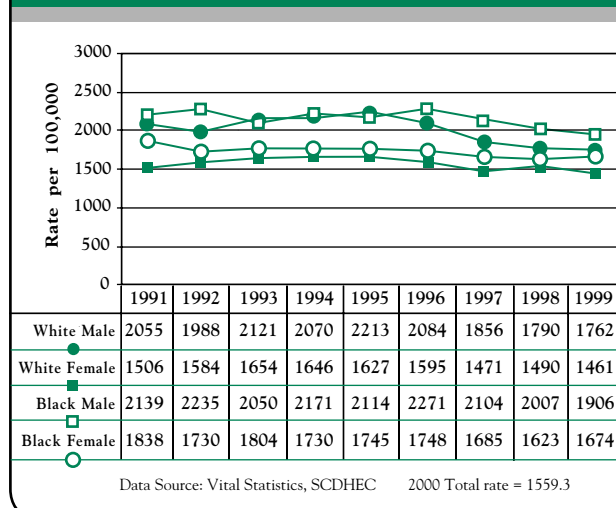


this increased to \$117 billion. Most of these costs were due to type 2 diabetes, coronary heart disease, and hypertension.)

Many premature deaths due to chronic diseases are preventable. Moderate physical activity, not using tobacco, maintaining an appropriate weight, and eating a proper diet are among the lifestyle behaviors South Carolinians can adopt to ward off chronic diseases. Despite this knowledge, in South Carolina almost one in four adults smokes. The 24.9 percent of South Carolinians who were smokers in 2000 is far above the national goal of no more than 12 percent by 2010.

On the other hand, South Carolina adults (18 years old and older) who engage in 30 minutes of moderate physical activity five or more days per week increased from 18 percent in 1995 to 20.7 percent in 2000. Despite

Heart Disease Mortality Rates Ages 65 and older



this improvement, however, it is well below the national objective of 30 percent.

The **Behavioral Risk Factor Surveillance System (BRFSS)** is an ongoing survey to gauge the health of populations. When the BRFSS asked South Carolinians about their perceptions of their health in 1999:

- Eighty-six percent of adults reported having excellent, very good, or good health.
- Whites generally rated their health status better than African Americans did. However, the racial gap in self-rated health status tends to be closing
- Adults ages 18 to 64 reported more days of poor mental health than adults 65 and older. Women more than men

said they experience poor mental and physical health. Blacks also reported faring more poorly than whites in those two areas as well as in the number of days their activities were limited because of physical and mental problems.

The five leading causes of death in South Carolina are heart diseases, cancers, strokes, accidents, and chronic lower respiratory diseases. However, South Carolina has shown some improvement over the past decade in some areas, according to the United Health Foundation's 2001 State Health Rankings:

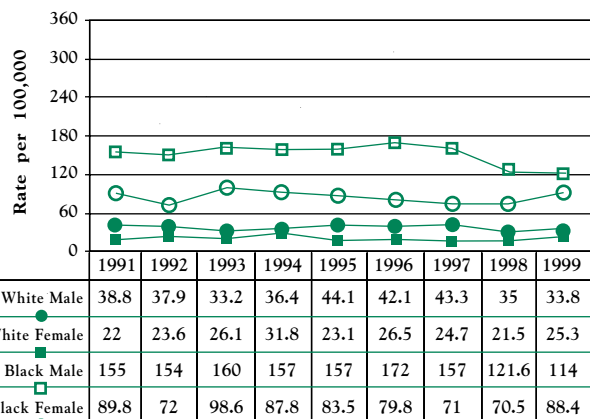
- Motor vehicle deaths dropped from 3.1 per 100,000 in 1990 to 2.4 per 100,000 (23 percent improvement).
- Risk for heart disease decreased from 7 percent above the national average in 1990 to 4 percent above (43 percent improvement).
- Heart disease deaths were down from 337 per 100,000 in 1990 to 279 (17 percent improvement).

Among the burden of life-claiming diseases are:

- **Cancer:** According to *S.C. Cancer Facts and Figures 2001-2002*, the four most common types of fatal cancers in the state from 1994-1998 were lung, colon/rectum, breast and prostate. South Carolina ranks second in the nation in oral pharynx deaths and multiple myelomas and third in the nation for prostate cancer deaths.
- **Diabetes:** Diabetes has an immediate impact on public health and medical care in South Carolina. Diabetes is the sixth leading cause of death in South Carolina, claiming more than 1,600 lives each year, according to *The Burden of Diabetes in South Carolina 1999*. Approximately 300,000 South Carolinians are affected by diabetes. One of every seven patients in a South Carolina hospital has

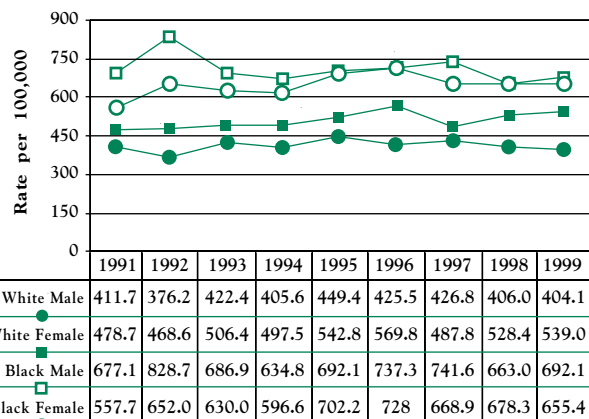
Improve health for all and eliminate health disparities

Stroke Mortality Rates, Ages 45-64



Data Source: Vital Statistics, SCDHEC 2000 Total rate = 38.2

Stroke Mortality Rates, Ages 65 and Older



Data Source: Vital Statistics, SCDHEC 2000 Total rate = 512.2

diabetes. The direct costs of hospitalizations and emergency room visits were over \$73 million in 1997. The burden of diabetes is more significant in minority and elderly groups.

- **Cardiovascular Disease (CVD)**, which includes heart disease and stroke, is South Carolina's leading cause of death for both men and women among all racial and

ethnic groups. In 2000, 12,780 South Carolinians died from CVD. Heart disease and stroke accounted for 44,291 hospitalizations in 2000, with a total hospitalization cost of more than \$937 million. In 1999, South Carolina ranked fifth in the nation for stroke deaths, and the rate was 25 percent higher than the U.S. average. South Carolina is one of 11 states referred to as the "Stroke Belt," with the coastal and Pee Dee areas of South Carolina designated as the "Stroke Buckle" because of an

exceptionally high rate of stroke deaths.

Risk factors for CVD include: smoking, obesity, physical inactivity, poor nutrition, hypertension, diabetes, and high cholesterol. Because most of the risk factors are more common in African Americans, they are at a greater risk of developing CVD. African Americans are 1.5 times more likely to suffer from heart disease and twice as likely to have a stroke than whites. Additionally, more than 50 percent of whites and blacks older than 65 in South Carolina have high blood pressure.

The challenge: Improving the health of all South Carolinians requires us to know where and what populations are experiencing a disparate proportion of disease. Understanding the reasons and taking effective, appropriate actions are complex tasks. Developing partnerships and community interventions takes a commitment of resources.

The link between health and the environment: We continue to recognize ways our environment affects our health. Fine particulate pollution has been connected to increased risk of cardiovascular disease and lung cancer. We now recognize how poor air quality contributes to respiratory problems and how lead in our homes can permanently harm our children. It also is becoming apparent that the way we build our communities affects our health. Sprawl is being connected to the increasing problems of obesity and cardiovascular disease because of more sedentary auto travel time and less walking, increases in pedestrian and auto-related deaths, degraded air quality from automobile use, and degraded water quality from improper use of septic systems and runoff pollution.

What we are doing: DHEC tracks health and environmental data over time as a gauge of how well we are doing in overall improvement of our state. One way DHEC tracks improvement is by comparing our rates on some leading health indicators with the national **Healthy People 2010** objectives (See page 2 for information on Healthy People 2010. Health indicator graphs begin on page 68). The derived data collected and analyzed by DHEC guides the planning and use of precious public health resources to promote healthy lifestyles and support primary disease prevention among all South Carolinians. DHEC also partners with communities to support public health efforts that target the prevention of disease, promotion of a healthier environment and elimination of racial and ethnic health disparities.

In 1998, CDC funded DHEC to develop and coordinate a cardiovascular disease program in South Carolina. In 2001, CDC designated South Carolina as a Comprehensive CVH Grant state, which provided increased funding with emphasis on interventions focused on policy and environmental change for communities. South Carolina is one of only six states to reach this level. The Division of Cardiovascular Health now is in the

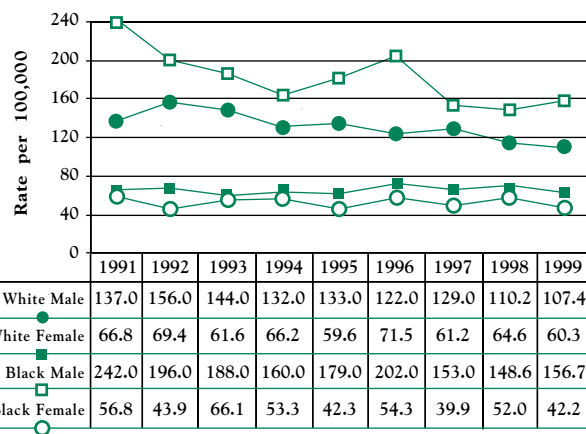
Improve health for all and eliminate health disparities

process of completing the comprehensive statewide plan that incorporates the efforts of many internal and external partners to provide education and awareness, screening and medical referrals, and treatment for cardiovascular disease. The three priority populations for the program and plan are African-Americans, the poor, and residents of rural, medically underserved areas. Previously, the Division of CVH awarded mini-grants to eight health districts to build infrastructure for CVH projects with local community partners. As a follow-up, CVH will be awarding funds to health districts collaborating with community partners to implement policy and environmental changes in schools, work sites, communities and/or faith communities. For more information: (803) 898-0726 or visit www.scdhec.net/cvh.

What you can do:

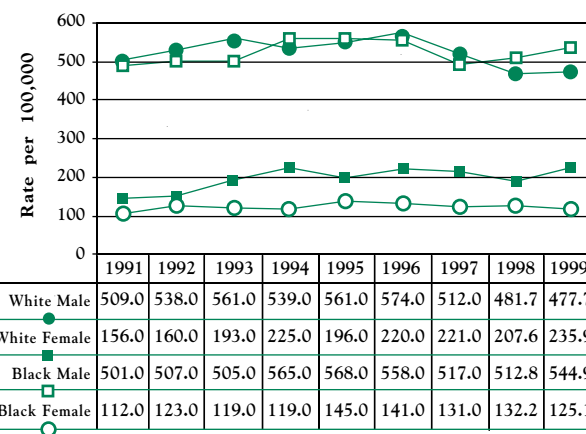
- Build and maintain a healthy lifestyle through a healthier diet, regular physical activity and being tobacco free.
- Take responsibility for your good health. Get regular checkups (preventive screening tests, immunizations, oral exams), consume alcoholic beverages in moderation, and drink at least eight glasses of water a day.
- Participate in community activities designed to improve health and the local environment.
- Promote planned development that incorporates healthy design.

Lung Cancer Mortality Rates, Ages 45-65



Data Source: Vital Statistics, SCDHEC 2000 Total rate = 81.8

Lung Cancer Mortality Rates, Ages 65 and Older



Data Source: Vital Statistics, SCDHEC 2000 Total rate = 331.5

Resources:

Public Health Grand Rounds
www.publichealthgrandrounds.unc.edu/urban/

Creating a Healthy Environment
www.sprawlwatch.org/health.pdf

DHEC Diabetes Control Program
www.scdhec.net/hs/comhlth/diabetes/index.htm

Improve health for all and eliminate health disparities

Health disparities are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States, according to the National Institutes of Health definition. Promoting healthy behaviors and assuring preventive health care are vital components of improving health for all. If we are to improve health for everyone in South Carolina, when diseases appear more frequently in one population than in another, they must be identified and addressed.

The issue: Health disparities

Why the issue matters: Improving the health status of all individuals and eliminating health disparities remains an important goal for the state and nation. Disparities in health exist when there is more disease among specific population groups. Various research efforts show that the burden of disease for various health conditions is not borne equally by all groups. Minorities, in general, suffer a disproportionate share of illness and early death. In both the state and nation, minorities experience poorer health outcomes and more premature deaths than whites.

Where we are now:

- African American infants in South Carolina are more than twice as likely than white babies to die before their first birthday.
- In the year 2000, African Americans in South Carolina were more than nine times as likely to be reported with HIV/AIDS than were whites.
- Although female breast cancer cases are higher for whites in the state, minority women, in particular African American women, are nearly twice as likely to die of the disease.

- According to the National Cancer Institute, Hispanic women have the highest incidence of cervical cancer, although African American women are more likely to die of the disease.
- Diabetes disproportionately impacts minorities. According to the American Diabetes Association, racial and ethnic minorities are more likely to develop, experience complications, and die of diabetes.
- Although heart disease is the leading cause of death for all racial and ethnic groups, African Americans are more likely to die from the disease than any other racial group in the state.

Racial and ethnic minorities are also more likely to report behaviors linked with increased disease. Investigating the connection between these behavior practices and racial and ethnic minorities is key in reducing their prevalence. Based on Centers for Disease Control and Prevention (CDC) estimates, more than 60 percent of African Americans and Hispanics in South Carolina are overweight or obese. In addition, Hispanics in the state are more likely to report smoking than are other racial groups.

Health disparities are evident not only in the incidence, severity and management of diseases, but also in access to health care. The leading causes of illness and premature death are largely preventable. Access to appropriate, acceptable and affordable health care is important. However, racial and ethnic minorities in the state are less likely to report having health care coverage. Between 1997 and 1999, African Americans were nearly twice as likely to report not having insurance coverage compared to whites. In addition, minorities are less likely to report feeling satisfied with their level and quality of health care.

The challenge: Identifying and tracking health disparities or gaps between racial and ethnic groups are crucial to improving the health status of the state. An important

reason for tracking disparities in health is the recent growth and predicted increase in South Carolina's minority population. Based on recent Census data, South Carolina's minority population has increased by more than 70 percent since 1970. Between 1990 and 2000:

- The Hispanic population more than doubled;
- Asian-Pacific Islanders increased by 65 percent;
- American Indians increased by 66 percent; and
- African Americans increased by 14 percent.

What we are doing: DHEC continues its work in eliminating health disparities with the focus of many initiatives placed on the community. Two of the initiatives include:

- **Voices of the Community-** Zero Health Disparities was a series of 11 community health forums coordinated by the Office of Minority Health in collaboration with other agencies and organizations as a special initiative by the DHEC Commissioner's Task Force on Health Disparities. The forums targeted African Americans in counties with high levels of racial and ethnic disparities for various health conditions. The forums allowed community members to express concerns about health problems/issues affecting them and their community and to define appropriate solutions for improving their health.
- **Real Men Checkin' It Out** is a prostate cancer health communication and education initiative targeting African American men in South Carolina. The initiative addresses the prostate cancer health disparity rates between African American men and white men in the state. African American men are three times more likely to die of prostate cancer than their white counterparts. This initiative stresses the importance of early detection and screening for prostate cancer and has engaged many community-based groups in prostate education and awareness. The program has since been successfully adopted by Palmetto Health Alliance. Future steps

Improve health for all and eliminate health disparities



“For too many racial and ethnic minorities in our country, good health is elusive, since appropriate health care is often associated with an individual’s economic status, race and gender. While Americans as a group are healthier and living longer, the nation’s health status will never be as good as it can be as long as there are segments of the population with poor health status.”

-U.S. Department of Health and Human Services

include collaborations with Historically Black Colleges and Universities to continue the process of prostate cancer education and screening.

What you can do: Engaging the community is critical in eliminating racial and ethnic health disparities. Understanding the relationships between health status and racial and ethnic minority groups will require a close working relationship with communities to identify strategies and prevention programs that fit their needs. In addition, the elimination of health disparities will require a continued commitment from the public and private sectors as well as individuals and communities.

Issue: Racial and Ethnic Disparities in Health — Diabetes

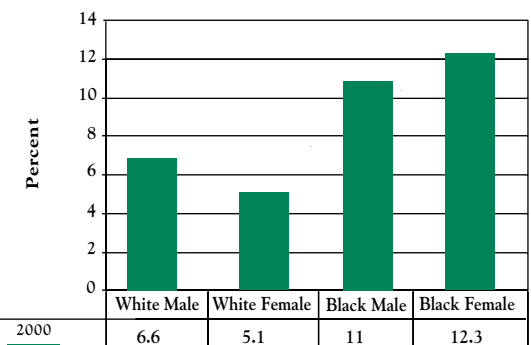
Why the issue matters: In both the state and nation, racial and ethnic minorities are more likely than whites to develop, experience complications, and die of diabetes. National health surveys point to an increasing trend in diabetes disease among African Americans. One such study showed a doubling rate for total prevalence of diabetes among African Americans in just 12 years. Racial and ethnic minorities, in particular African Americans, are disproportionately impacted by diabetes in South Carolina:

- Minorities are more than twice as likely to report having diabetes than whites.
- African American men are nearly twice as likely to die of diabetes than white men.
- African American women are more than four times as likely to die of diabetes than white women.
- African Americans have a higher incidence of and greater disability from diabetes complications, such as kidney failure, visual impairment and amputations.

In addition, studies show a dramatic link between diabetes and cardiovascular disease. Heart disease is the leading cause of diabetes-related deaths, and the risk of stroke is two to four times higher in people with diabetes. Minorities, already at an increased risk of dying from cardiovascular disease, are even more likely to die if diabetic. However, complications and deaths due to diabetes can be prevented or reduced with proper management of the disease. Healthy lifestyles such as eating healthy foods, getting regular exercise, maintaining an appropriate weight and receiving regular checkups are important for people with diabetes and those with an increased risk of developing the disease.

Where we are now: Diabetes remains one of the most serious health problems facing South Carolinians. Diabetes occurs when the body’s inability to properly produce or respond to insulin results in high levels of blood

Diabetes Prevalence Among South Carolina Adults, 2000



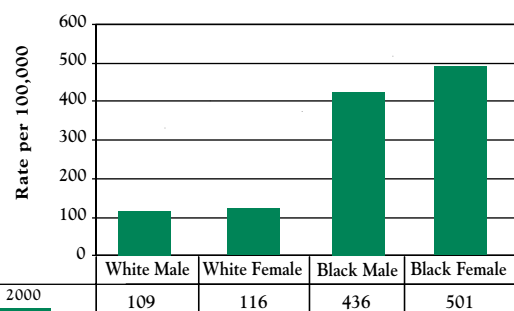
Data Source: SC BRFSS

Improve health for all and eliminate health disparities

glucose. Based on recent estimates of the prevalence of diabetes, nearly 160,000 South Carolinians are aware they have the disease. However, an equal number or more are unaware of their diabetes, which could lead to increased chances of complications and death. Although complications associated with diabetes can be prevented or reduced with specific preventive practices, South Carolinians have high rates of diabetic complications. More than half of lower extremity amputations occur among persons with diabetes.

The human and financial costs of diabetes are tremendous. Nationally, health care and other costs directly related to diabetes treatment as well as the costs of lost productivity run \$98 billion annually, according to the American Diabetes Association. In South Carolina, hospital charges for patients with a primary diagnosis of diabetes were just over \$1 billion in 2000. Racial and ethnic minorities in the state accounted for more than 50 percent of these charges.

Rates of Emergency Room Visits for Diabetes, SC, 2000



Data Source: SC Budget and Control Board Office of Research and Statistics

Diabetes remains the sixth leading cause of death in the state, with more than 1,000 deaths attributed to the disease in 1999 alone. South Carolina ranks ninth in the nation for diabetes-related deaths, according to CDC.

The link between health and the environment:

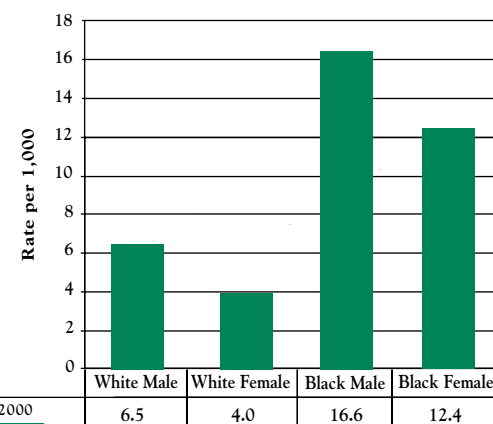
Healthy lifestyle choices are an individual's responsibility and also affect the community. For health disparities initiatives to be effective in reducing diabetes, they must incorporate both environmental and policy perspectives. Limited access to physicians and affordable supplies, not requiring physical education in our schools, poor nutritional-based choices found in our schools and work cafeterias, and lack of "walkable communities" are all community issues that require communitywide response.

The challenge: To reduce the disease and economic burden of diabetes and improve the quality of life for all persons who have or are at risk for diabetes. Define the factors that contribute to disparities and to implement change.

What we are doing: In 1994, DHEC received CDC funding to administer the **S.C. Diabetes Control Program (S.C. DCP)**, which strives to improve access and availability of high quality diabetes care and services. The program places an emphasis on high-risk populations and those disproportionately burdened by diabetes. Through partnerships and related community and statewide infrastructure interventions, the S.C. DCP hopes to increase by 5 percent annually the number of persons with diabetes who receive appropriate preventive measures. A long-term goal is to reduce disparities in complications and preventable deaths from diabetes in South Carolina's African American populations.

Three major components of the S.C. DCP seek to nurture and enhance infrastructure development to support increased awareness of diabetes at the community level:

Rate of Diabetic Lower Extremity Amputation Among Medicare Beneficiaries With Diabetes



Data Source: SC Budget and Control Board Office of Research and Statistics

Health Systems: A collaborative effort has been launched by S.C. DCP, DHEC's Bureau of Primary Health Care and the S.C. Primary Care Association. Interventions are designed to improve diabetes care in office-based practices in medically underserved areas of the state and to increase diabetes self-management skills in patients who attend these primary care centers for diabetes care. Priority populations are African Americans, the elderly, and uninsured and underinsured.

Health Communications and Coalitions: The development of regional diabetes coalitions at the community level is an initiative of both the S.C. DCP and the Diabetes Initiative of South Carolina. The goal of coalition development is to build and strengthen communities'

Improve health for all and eliminate health disparities

ability to use resources better and to advocate for diabetes reduction. In addition, a Listserv has been established to provide stakeholders a way to share ideas and current information. Membership is open to the public.

Community Education: Community education is conducted through community-based, community-owned programs for the prevention and management of diabetes. Diabetes Today, a CDC signature program, uses a community mobilization model that guides affected communities in understanding the burden of diabetes and provides a process for customizing their approach to wellness.

What you can do: Eliminating disparities in the incidence and complications of diabetes will require both an individual and community commitment to the health problem.

Become your own activist for diabetes by learning how to control the ABCs of diabetes.

- A is for A1C. The A1C (A-one-C) test - short for hemoglobin A1C - measures your average blood glucose (sugar) over the last three months. The target number is below 7.
- B is for blood pressure. High blood pressure makes your heart work too hard. The target is below 130/80.
- C is for cholesterol. LDL (the bad cholesterol) builds up and clogs your arteries. The target LDL number is below 100.

Resources:

The American Diabetes Association
<http://www.diabetes.org>

Juvenile Diabetes Research Foundation
<http://www.jdf.org>

The National Office of Minority Health
<http://www.omhrc.gov>

The National Institute of Diabetes and Digestive and Kidney Diseases
<http://www.niddk.nih.gov/>

The Centers for Disease Control Diabetes Page
<http://www.cdc.gov/diabetes/index.htm>

The S.C. Diabetes Control Program
<http://www.scdhec.net/hs/comhlth/diabetes>

The Diabetes Initiative of South Carolina
<http://www.musc.edu/diabetes/>



Improve health for all and eliminate health disparities

The Georgetown County Diabetes CORE Group originated from Diabetes Today training. Formed by Mrs. Florene Linnen in 1997, the CORE Group is a community initiative to address the need for more education and awareness programs for people with diabetes and other related illnesses.

The CORE Group offers:

- Information on nutrition for people with diabetes and their families.
- Referrals to resources to help with diabetes care and supplies.
- Educational workshops on diabetes risk factors and ways to prevent or delay complications.
- Links to trained professionals.
- Information on the latest treatment programs for people with diabetes.

Currently the CORE Group is working with the Racial and Ethnic Approaches to Community Health (REACH) grant from CDC housed at the Medical University of South Carolina to help disseminate information into the Georgetown community.

Issue: Racial and Ethnic Disparities in Health — HIV/AIDS

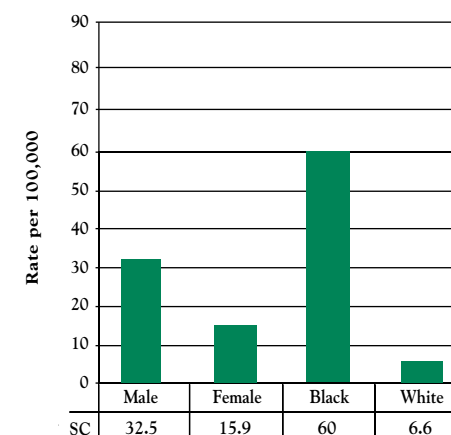
Why the issue matters: One of the largest disparities between racial and ethnic population groups can be seen in reported HIV/AIDS cases in South Carolina. While reported cases of HIV/AIDS among other racial and ethnic minorities are relatively low in the state, African Americans have been greatly impacted by the disease. Of all newly reported HIV cases in the state during 2000, 78 percent were among African Americans. During this same time period, African Americans were more than nine times more likely to have HIV/AIDS than whites in the state.

- For more than a decade, more African Americans have had HIV/AIDS than any other racial or ethnic group.
- African American men have accounted for half of all newly reported HIV cases in South Carolina for more than a decade.
- HIV/AIDS is the third leading cause of death for racial and ethnic minorities ages 25 to 44 years in the state.

Although great strides have been made in the HIV epidemic, including increased public awareness, prevention and educational programs, and screenings, many populations still remain in a high-risk bracket for HIV infection. In South Carolina only white males have shown a marked decrease in HIV cases, from 50 percent of reported cases in 1986 to 16 percent in 2000. During this same time period the proportion of African American females reported with HIV each year more than quadrupled, from 6 percent in 1986 to 29 percent in 2000.

Where we are now: Despite declining cases of AIDS due to highly active antiretroviral therapy (HAART, also

HIV/AIDS Rate by Gender and Race Cases Diagnosed in 2000



Source: SCDHEC HIV/AIDS Surveillance Data, Data are Provisional

known as drug 'cocktails'), HIV remains a serious and often fatal disease. In South Carolina the number of newly reported cases continues to rise each year. More than 16,000 HIV/AIDS cases have been reported since 1986, with the majority of the cases among African Americans. Between July 1999 and June 2000, the annual AIDS case rate in South Carolina ranked eighth in the nation.

Heterosexual contact is the most frequently reported mode of transmission in the state. In 2000, nearly 50 percent of HIV infected persons with an identified risk were infected through heterosexual exposure to the virus.

Recent trends also point to increasing HIV cases among minority women and youth. Among applicants to the U.S. Job Corps program, HIV prevalence was 50 percent higher for women than men and seven times higher for young African American women than for young white

Improve health for all and eliminate health disparities

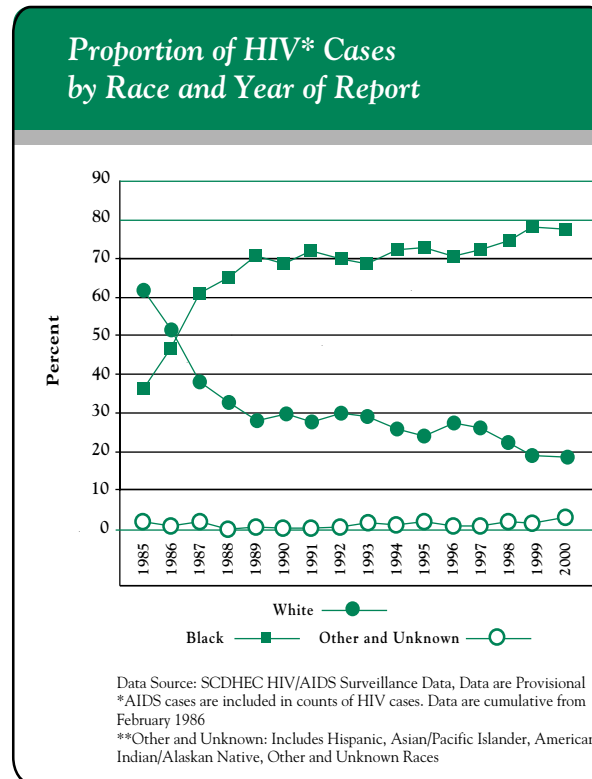
women. South Carolina ranked fourth in the Job Corps study for highest HIV prevalence among young women, with more than eight per 1,000 young women being HIV infected.

The financial costs of treating HIV can be staggering. The estimated direct cost of health care for an HIV infected patient ranges from \$260 per month to as high as \$2,760 per month (1993 dollars). In the year 2000, South Carolinians spent more than \$46 million on hospital charges for primary and secondary diagnosis of HIV infection. However astounding this figure may be, these dollars reflect only a small portion of the financial burden associated with the treatment of HIV.

The communicable nature of HIV and inefficient HIV prevention strategies in minority populations over the past decade have made this major public health problem a priority. In addition, the success of HAART has lulled the public into a false sense of security that the epidemic of HIV is no longer important. This creates a need for more complex prevention programs. Effective prevention programs must not only be designed for the target population and community driven, but also must address this issue of complacency.

The link between health and the environment: It is important to note that race and ethnicity are not risk factors for HIV/AIDS. Rather, it is the connection of race with other factors such as limited access to health care, poverty, health care-seeking behaviors, drug use and living in communities with a high prevalence of sexually transmitted diseases that poses the real risk.

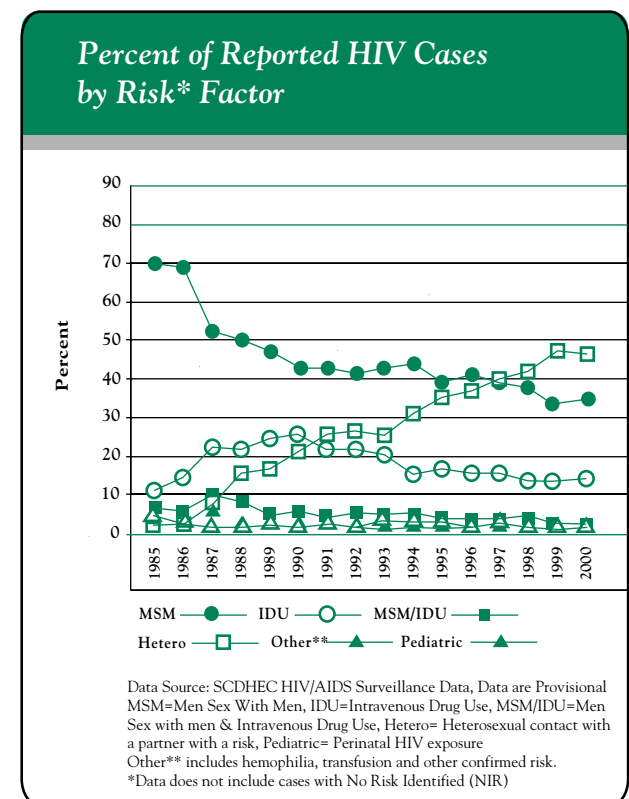
The challenge: To prevent HIV infection and its related illness and deaths through the use of culturally appropriate prevention efforts and collaborations targeting communities and individuals at increased risk for HIV infection; to provide technical assistance to community planning groups, conduct communitywide needs assessments,



and evaluate current and future prevention and surveillance efforts of the HIV epidemic in South Carolina.

What we are doing: A number of partnerships exist to address HIV/AIDS:

The S.C. Minority HIV/AIDS Demonstration Project is a three-year federally funded demonstration project to address the impact of HIV in African American communities by identifying and building capacity in South Carolina minority community-based organizations (MCBOs). To date, more than 60 community-based organizations have been identified and included in a reg-



istry of organizations that provide HIV/AIDS treatment and support services to African Americans. The demonstration project has provided training and technical assistance for MCBOs forming nonprofit organizations, assisting in their application for federal tax exemption as well as providing skills in basic grant writing. Additionally, a one-day summit was held in August 2000 to help build capacity and establish links to resources for MCBOs.

Save Yourself...Save Your Community, The Inaugural HBCU HIV/AIDS Summit was sponsored by a partnership of DHEC, the Legislative Black Caucus and the S.C.

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Department of Alcohol and Other Drug Abuse Services and the state's eight Historically Black Colleges and Universities (HBCUs). The summit provided an opportunity for HBCU students and administration to work toward integrating HIV prevention into curricula. The kickoff included Gov. Jim Hodges signing a proclamation declaring Oct. 25, 2001, as Historically Black Colleges and Universities HIV/AIDS Awareness Day. More than 1,500 students attended, and more than 100 obtained screening for HIV and/or syphilis.

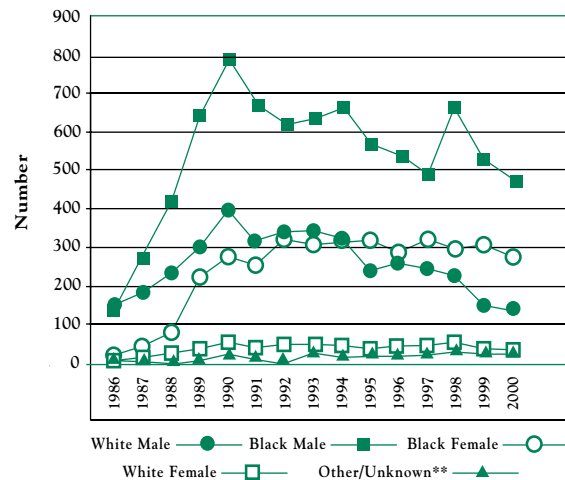
What you can do: There is no cure for AIDS, and anyone can get HIV. The most important thing to know is how to avoid getting the virus.

- If you have sex, protect yourself by using a condom.
- Do not share needles.

Babies born to women with HIV also can become infected during pregnancy, birth or breast-feeding.

South Carolinians, especially those who are part of the disparately affected communities, must support leadership and programs, efforts and activities that confront the stigma, fear, discrimination and complacency associated with HIV/AIDS. Moreover, keeping abreast of changes and advances in the HIV epidemic as well as policies and regulations impacting prevention and surveillance efforts is an important step in becoming a better advocate for change.

**Reported Cases of HIV*
By Year of Report, Race and Gender**



Data Source: SCDHEC HIV/AIDS Surveillance Data, Data are Provisional
*AIDS cases are included in counts of HIV cases. Data are cumulative from February 1986
**Other/Unknown: Includes Hispanic, Asian/Pacific Islander, American Indian/Alaskan Native, and Unknown Races

Resources:

The Surgeon General's HIV/AIDS Web site
<http://www.surgeongeneral.gov/aids>

The National Office of Minority Health
<http://www.omhrc.gov>

HIV/AIDS Bureau of HRSA
<http://www.hab.hrsa.gov>

The Centers for Disease Control HIV/AIDS Page
<http://www.cdc.gov/hiv/dhap.htm>

The National Minority AIDS Council
<http://www.nmac.org>

The NIH Office of AIDS Research
<http://www.nih.gov/od/oar/>

The Indian Health Service HIV Center of Excellence
<http://www.ihs.gov/MedicalPrograms/AIDS>

The AIDS Education Global Information System
<http://www.aegis.com>

The S.C. DHEC STD/HIV Program
<http://www.scdhec.net/HS/diseasecont/stdwk/html/stdindex.htm>

S.C. AIDS/STD Hotline
Monday through Friday, 9 a.m. to 8 p.m.
1 (800) 322-AIDS (2537)
in the United States.

Assure children and adolescents are healthy

Assuring our children and teens enjoy good health builds the foundation for future healthy adults. Health conditions affect the readiness of children to learn and grow into productive citizens. Health initiatives must encompass the range from making sure babies are born healthy to promoting healthy teen behavior. Healthy development depends on healthy pregnancies and infancy, strong and nurturing families, skilled caregivers, supportive communities, and healthy teen behaviors.



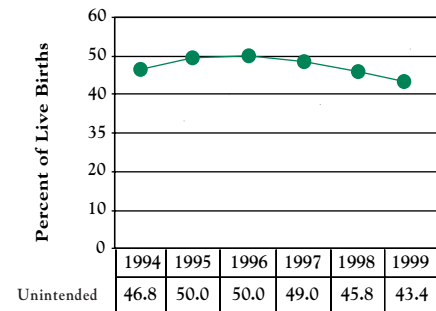
Issue: Healthy pregnancies, healthy births

Why the issue matters: If South Carolina is to have healthy and productive adults, our babies must be born healthy. Children born healthy and with an appropriate weight have a much better chance of growing up to be healthy adults. A healthy pregnancy is key to giving birth to a healthy child. Some factors that greatly impact pregnancy outcomes include whether the mother planned to be pregnant, the quality and quantity of prenatal care, and the age of the mother during pregnancy.

Where we are now: The numbers of unintended and teenage pregnancies are declining; unfortunately, so is the number of low-weight babies receiving risk-appropriate care at birth. High-risk births need to occur at specialized hospitals equipped and prepared to prevent infant deaths. South Carolina has made significant improvements in its infant death rates, but the gap between black and white baby deaths has grown. Most of these deaths occur in the first 28 days of life.

- **Pregnancy Intendedness** - Whether a pregnancy is intended or not is a factor in increasing the chances of having a low birth weight (less than 5.5 lbs) or very low birth weight (less than 3.5 lbs) infant. According to **PRAMS (Pregnancy Risk Assessment Monitoring System)**, a survey of new mothers), an unintended pregnancy is one that is either mistimed (wanted at a different time) or unwanted. Since the PRAMS survey was first begun in South Carolina in 1993, the percent of unintended pregnancies has remained at about half of all pregnancies. In the 1999 survey, that number dropped to about 44 percent, an encouraging result, but still short of the Healthy People 2010 Objective of no more than 30 percent of all pregnancies in the United States to be unintended.

Percent of S.C. Women Giving Birth Whose Pregnancy was Unintended

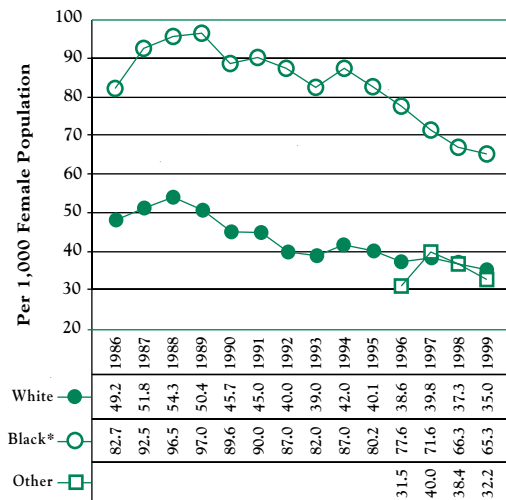


Data Source: PRAMS

- **Risk-Appropriate Care and Appropriate Delivery Setting** - Early, adequate and risk-appropriate prenatal care can reduce the chance of preterm very low-weight births. A risk-appropriate delivery is defined as the proportion of very low-weight infants (weighing less than 3.5 lb. at birth) delivered at hospitals specifically designated for high-risk deliveries. However, risk-appropriate care involves much more than the delivery site. It includes assessment of risk level and being followed by an appropriate doctor: a family physician or obstetrician for low risk, an obstetrician for moderate risk level, or a perinatologist for a very high-risk pregnancy. Additional services such as nutrition counseling, social services, transportation to prenatal appointments, and health care coverage must also be included.

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Trends in S.C. Adolescent Pregnancy Rates by Race, Ages 15-17



Data Source: SCDHEC Bureau of Epidemiology
* Prior to 1994-1996, Black includes black and other.

In 2000, 79 percent of all new mothers received prenatal care in the first trimester. In that year, 84 percent of all white mothers, 70 percent of black mothers, and 77.5 percent of other mothers had early care. Nonwhite mothers have experienced a 29 percent improvement in early entry from 1992-1999. In 1999, 26 percent of women received less than adequate prenatal care, including 20 percent of white women, 36 percent of black women, and 30 percent of women of other races. These numbers have improved over the past 10 years, but a racial gap still exists.

Analyses of South Carolina's regionalized model of service delivery for high-risk pregnancies have demonstrated its effectiveness in providing complex care to prevent infant deaths. However, the percent of very low-weight infants delivered at tertiary-level (the most sophisticated level of care) hospitals has decreased from 76 percent in 1992 to 70 percent in 1999. This decrease is associated with competition among hospitals for the management of more complex deliveries. As a result, South Carolina has made little progress in recent years in attaining the Healthy People 2010 Objective of increasing to at least 90 percent the proportion of women and infants who receive risk-appropriate care.

- **Teenage Pregnancy** - Births to teens have negative health and social consequences for young mothers, their children, their families, and for the community. Prevention of teen pregnancy is the best answer, but prevention efforts themselves raise health, social, ethical and legal issues. Adolescent pregnancy rates have decreased through the 1990s. By 1999, the rate for all races was 46.5 pregnancies per 1,000 15- to 17-year-old teenage females and is close to the Healthy People 2010 Objective of no more than 43 pregnancies per 1,000 adolescent females ages 15-17 years.

Challenge #1: Increasing the number of pregnant women receiving adequate prenatal care. Some barriers include:

- Rural areas of the state have fewer obstetrical providers than urban areas.
- The supply of perinatal providers falls far short of the demand for their services.
- Many pregnant women do not have adequate transportation. Mass transit is limited in South Carolina. Social service agencies provide transportation for those women who qualify. But this service might not always be

available for the day and time a woman needs to keep her appointment.

- There is a lack of awareness of differences in cultural needs and sensitivity on the part of some providers.

Challenge #2: Reducing infant mortality.

South Carolina saw significant improvements in infant mortality through the 1990s. From a high of 11.6 deaths per 1,000 live births in 1990, the total infant mortality rate reached its lowest point in 1996; with a rate of 8.3, this represented a 29 percent drop in that six-year span. In 1997, the total rate increased to 9.5 and increased again in 1999 to 10.3. In 2000, the rate fell to 8.7. Although overall progress has been made, South Carolina has a long way to go to reach the Healthy People 2010 objective for the nation of no more than 4.5 infant deaths per 1,000 live births.

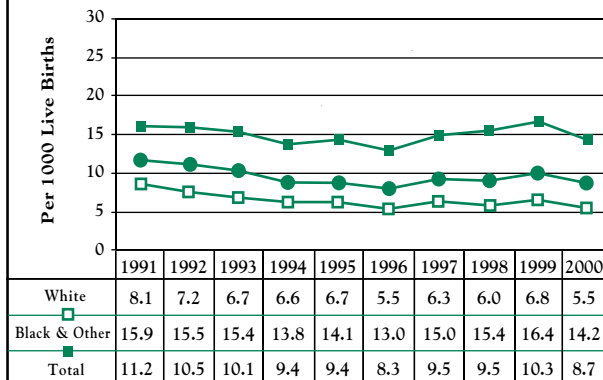
Race-specific infant mortality rates have also improved through the decade of the 1990s, though not at the same rate. The nonwhite rate was approximately 2.1 times higher than the white rate at the beginning of the decade, and by 1999 it was 2.5 times higher.

Most infant deaths over the past several years have been due to deaths in the first 28 days of life (neonatal mortality). The black-and-other neonatal death rate in particular remained unchanged through the first half of the decade, varying only slightly around an average of 10.3 deaths per 1,000 live births. By 2000, this rate was 9.9, far from the Healthy People 2010 objective of 2.9 neonatal deaths. By contrast, the white neonatal death rate improved over the decade from a high of 5.6 in 1990 to a low of 3.4 in 1996. Reducing racial disparities in neonatal deaths is the key to reducing the statewide infant mortality rate: During the 1990s black-and-other infants have had two times the risk of death as white infants during the neonatal period.

Racial differences provide important clues about where to focus neonatal death prevention efforts. Deaths due to adverse maternal conditions (e.g., maternal com-

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S.C. Infant Death Rates by Race



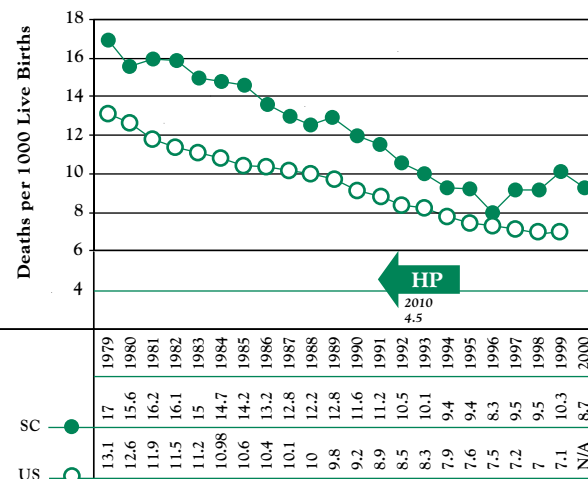
Data Source: Vital Statistics, SCDHEC

plications, pre-existing maternal health conditions, complications of pregnancy, labor and delivery) increased significantly for black-and-other infants, but not for white infants. Deaths associated with very low birth weight and prematurity also show clear racial differences. The rates for black-and-other infants are consistently higher than those for white infants, and the disparities have increased.

Significant improvements in South Carolina's postneonatal mortality rate (deaths to infants age 29 days to 12 months) occurred during the 1990s. Improvement in postneonatal deaths in South Carolina can be attributed to major reductions in deaths due to Sudden Infant Death Syndrome (SIDS). The declining death rate was most pronounced for black-and-other infants.

What we are doing: The key to reducing unwanted and mistimed pregnancies is prevention. DHEC has family

U.S., S.C. Residents Infant Death Rates



Data Source: SC DHEC Bureau of Epidemiology

planning clinics in all areas of the state available to women at all income levels. Women also can access many private providers to have their family planning needs met.

Teen pregnancy intervention programs exist around the state and include education programs, family planning programs, parenting programs for parents of teens, media coverage of the issue, and youth development programs. Programs and public policies are effective in changing teen behavior, resulting in fewer teens becoming pregnant. For more information, contact the March of Dimes at (803) 252-5200 or visit www.midnet.sc.edu/marchofdimes, the S.C. Campaign to Prevent Teen Pregnancy at www.teenpregnancysc.org, or Healthy Start at www.healthystart.net.

Efforts to address barriers to **prenatal care** are ongoing. Over the past several years, partnerships between private obstetricians and DHEC have been formed in which private practitioners provide medical care while the health department provides family support, follow-up and other support services to women. In this way both partners specialize in what they do best, resulting in better care for pregnant women. To find a prenatal care provider, contact a local DHEC county public health department or the DHEC CareLine at 1-800-868-0404.

DHEC conducted a public health educational “**Back to Sleep**” initiative in which mothers were advised that putting infants to sleep on their backs has been shown to reduce the risk of SIDS. The state's reduction in postneonatal mortality rates coincided with the initiative. For more information on SIDS, visit www.sids-network.org/

What you can do: The best way to prevent unintended pregnancy is to practice sexual abstinence. The next best way is to use contraception correctly and consistently. Parents can do their part in preventing teen pregnancy by talking openly and honestly with their teens about sex and other high-risk behaviors; discouraging early and steady dating; creating an open, free environment at home where children feel free to ask questions and discuss topics such as sexuality; and working toward improving the self-esteem of their children. Communities and faith organizations can participate in the S.C. Campaign to Prevent Teen Pregnancy. More information and suggestions are available at www.teenpregnancysc.org.

Any woman who is pregnant can enhance the chances of having a healthy baby by taking care of herself, getting enough rest, eating a proper diet, and avoiding tobacco, alcohol and all drugs, as well as knowing the signs and symptoms of premature labor. Women who are pregnant should see a provider appropriate to their risk level. Women with complications or a history of problems

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should be followed by an OB/GYN or perinatologist, depending on the severity of the complications, who will see that they deliver at a hospital prepared to handle any complications.

Resources:

Healthy Infants

www.cdc.gov/nccdphp/drh/prams_sc.htm
www.drss.state.sc.us/abstract_99/chap1.html
www.childbirth.org/
www.healthystartassoc.org/

Teen pregnancy prevention

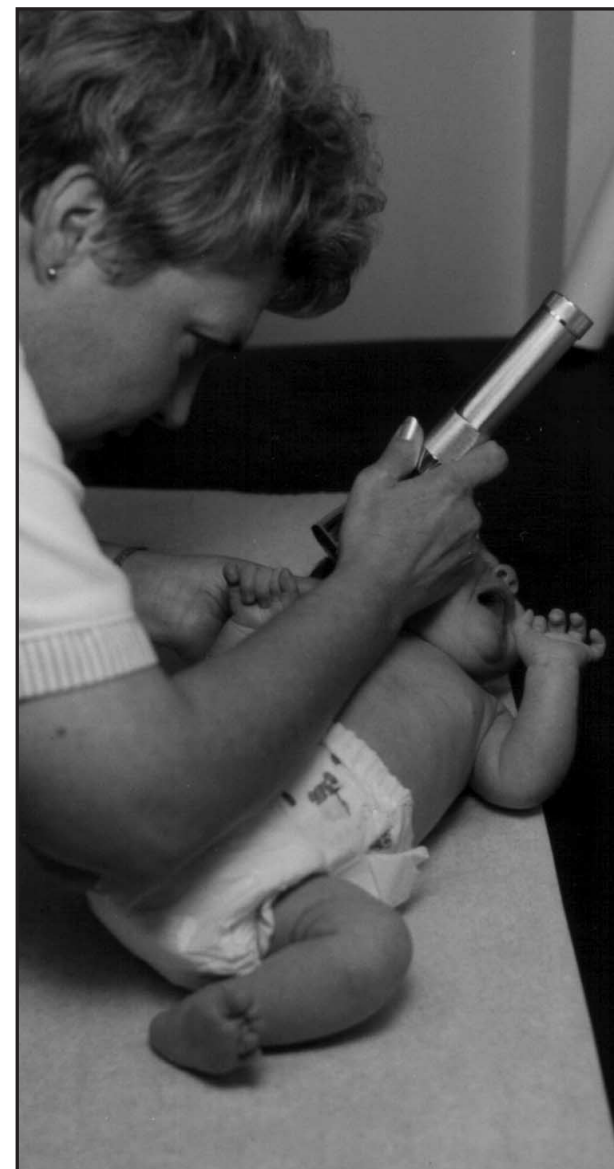
www.teenpregnancy.org
www.freeteens.org/
www.scdhec.net/hs/mch/wcs/fp.htm

Prenatal Care

SC March of Dimes Chapter (803) 252-5200
www.midnet.sc.edu/marchofdimes/
www.healthystart.net/
www.scdhec.net/hs/mch/wcs/mat.htm
www.scdhec.net/hs/mch/wic/index2.htm

Newborn Hearing Screening

South Carolina's First Sound Program screens babies for hearing loss before they are discharged from the hospital and provides referral to appropriate early intervention and treatment for those babies diagnosed with hearing loss. About 150 babies born each year have a hearing loss. These children can develop language and communication skills in a normal range if the loss is detected and addressed before they are six months old. DHEC is the lead agency for First Sound. Legislation was passed and funding appropriated for universal newborn hearing screening in 2000.



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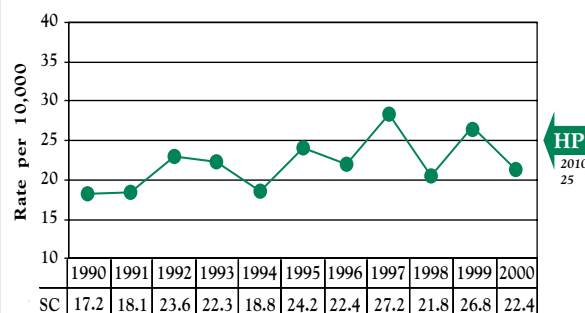
Issue: Environmental factors affect children — Asthma

Why the issue matters: Asthma is a serious chronic disease of the airways and an important public health problem. It is the second most common childhood disease and affects children disproportionately. Asthma is characterized by two main components - airway constriction and inflammation or swelling. Triggers bring on asthma, which results in shortness of breath, wheezing, chest tightness and/or cough. Triggers include things the individual is allergic to, irritants in the air, respiratory infections, exercise and other strenuous activities, and the weather. Respiratory infections represent the most common trigger of an attack in children. Severe asthma attacks may require a visit to an emergency room or hospitalization.

Where we are now: Since 1990 in S.C., asthma and related conditions have been the leading causes of children's hospitalizations among those ages 19 and younger. In 2000 alone, there were 2,544 hospitalizations for asthma involving children under 18 years old, at a cost of more than \$9 million.

In 1999, black males were more than twice as likely to be hospitalized for asthma than any other group. The hospitalization rate for black males was 40.7 per 10,000 compared to 26.4 for black females, 18.4 for white males, and 11.7 for white females. The asthma death rate among all children from birth through 14 is currently (1995-1999) 0.4 per 100,000. This is the same as the rate in 1991-1995. However, at a current rate of 0.6 per 100,000, black and others as well as males are at least three times more likely to die from asthma than whites or females, which both have a rate of 0.2 per 100,000. Since 1991-1995, the asthma death rate among older (15- to 19-year-old) adolescents has dropped to from 0.4 to 0.1 per 100,000 in the current (1995-1999) period. This decrease in deaths was observed for all 15- to 19-year-olds except for whites and

Asthma* Hospitalizations Among Children Ages Birth to 19



Data Source: SC Budget & Control Board (ORS)
*Asthma as primary diagnosis

males. Between 1991-1995 and 1995-1999, the highest rates were initially seen among black and others as well as males, but in more recent years, whites and males have had higher death rates. Among these older children ages 15-19, the death rate for whites is at least twice that of blacks.

The link between health and the environment: Many triggers of an asthma attack that lead to emergency room visits and hospitalization are environmental and can be eliminated, reduced, or avoided.

The most common asthma “trigger” in children is a viral upper respiratory infection. However, any of the following can cause an asthma attack:

- Allergens: pollens from grass and trees, molds, dust mites, pet dander, and cockroaches and their waste.

- Irritants: air pollution (including ground-level ozone, see page 20), strong fumes in the air such as tobacco smoke, household sprays, perfumes and automobile fumes.

- Respiratory infections: colds, influenza, sore throats and sinus infections.

- Exercise and other strenuous activities that make a person breathe harder.

- Weather: especially cold air and sudden changes in weather conditions.

The challenge: To address asthma, we must increase our knowledge of the causes and figure out why some people are affected more than others; develop a statewide plan, with adequate resources, to address the increasing asthma problem in the state; educate and inform caregivers about asthma triggers, recognizing signs and symptoms of asthma

and asthma attacks, and linking children in need with providers.

What we are doing: Several agencies and partnerships are engaged in ongoing activities to reduce the burden of asthma in the state. The S.C. Asthma Planning Alliance (SCAPA) was formed in 1999 with public and private organizations. The SCAPA mission is to improve health management and quality of life for both children and adults with asthma.

If an asthmatic has information and is alerted to upcoming seasonal environmental triggers, physicians can prescribe medicines to avoid even the onset of asthma symptoms. The S.C. Clean Air Partnership, the American Lung Association, DHEC, the S.C. Department of Transportation and local meteorologists are providing the public with information about ground-level ozone that can affect asthmatics during the summer

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months. DHEC is exploring whether NASA satellite data can be compared with ground-level ozone and asthma occurrence data to predict asthma episodes. For more information, visit www.scdhec.net/eqc/baq/ozone/baqspare.asp.

The S.C. Department of Health and Human Services, Sisters of Charity Foundation of S.C., Greenville Hospital System, and Family Connection are working with individuals who suffer from asthma and their families across the state.

What you can do:

- Learn to recognize and teach children the triggers of an asthma attack. Prevention efforts can work if the asthmatic knows how to recognize and take appropriate action against an asthma attack.
- Be aware of ambient air conditions and pollution alerts for ozone and fine particulate matter.
- Asthmatics should know whom to call and where to best seek emergency medical assistance before it is needed.
- Asthmatics and caregivers should become informed about sources of information and support regarding prevention of acute attacks, such as the American Lung Association at 1-800-LUNG-USA. Information can also be obtained on the Internet (www.lungusa.org).
- Keep homes of asthmatic children free of allergens and irritants.

Issue: Environmental factors: Lead

Why the issue matters: Lead poisoning is a serious health problem that can do lasting harm to children, especially those under 6. Low levels of lead in the blood are associated with learning and behavioral problems. Children with high levels of lead can suffer from many problems including developmental delay, lowered intellectual capability, high blood pressure and, in extreme cases, seizures, coma and death. A child with an elevated blood lead level may have few apparent symptoms. Permanent damage may have already occurred before lead poisoning is diagnosed.

Where we are now: Progress has been made in the United States and South Carolina in reducing environmental lead exposure. Lead has been removed from automobile gasoline and residential paint, and lead solder is no longer used in food cans or plumbing. But there are still many sources of lead in our environment. Dust and paint chips from old paint remain the single most important exposure sources for children. Many older homes built before 1978 still have lead-based paint. Infants and toddlers living in older homes may eat dust or paint chips from deteriorating painted surfaces. Vinyl miniblinds can contain lead, and dust from these blinds is a common source of exposure, especially in mobile homes. Soil can be contaminated with lead and brought into homes on shoes or clothing. Certain occupations and hobbies that use lead may also be a source of exposure. Virtually every county in our state has older housing or other lead sources that put children at risk for lead poisoning. Lead poisoning is preventable. South Carolina has far to go before we can assure that the state has met the Healthy People 2010 Objective of no lead poisonings in children.

The link between health and the environment: Exposure to environmental lead can cause permanent health problems.

The challenge: Obtaining and maintaining a solid surveillance system would demonstrate where lead problems are located and who is most at risk. Educating providers and the public about the lead problem in the state and engaging the private sector provider community in risk screening and intervening and referring as appropriate is a significant effort.

What we are doing: One priority of DHEC's Childhood Lead Poisoning Prevention Program is to determine how widespread lead exposure is in our state. The program is working with the Women, Infants and Children (WIC) program to ensure that all 1- and 2-year-olds in the state served by WIC are screened for lead exposure. In 2000, 33,598 children under age 6 were screened. The screening identified 1,072 children with elevated blood lead levels. Of these children, 130 had blood lead levels high enough to require an environmental investigation of the child's home. All children with elevated blood lead levels are monitored frequently to ensure that their blood lead levels decrease.

DHEC is committed to primary prevention of lead poisoning through public awareness campaigns. A quarterly newsletter, *The Lead Leader*, provides updates and information on lead poisoning prevention for health care providers. The Childhood Lead Poisoning Prevention Program has a toll free number, 866-466-5323, so that callers anywhere in the state can access information on lead poisoning issues. Many informational materials are available. For more information, visit www.scdhec.net/HS/mch/wcs/lead.htm.

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What you can do:

- Learn about lead and how children can be exposed to it.
- Share information about lead with family and friends.
- See that your home and child care center are lead-safe environments.
- If you are a parent of a 1- or 2-year-old child, ask your child's doctor about lead screening.

Resources:

DHEC Childhood Lead Poisoning Prevention Program
www.scdhec.net/hs/mch/wcs/lead.htm

Lead Poisoning:
Centers for Disease Control and Prevention
www.cdc.gov

Environmental Protection Agency
www.epa.gov

Department of Housing and Urban Development
www.hud.gov

Alliance to End Childhood Lead Poisoning
www.aecplp.org

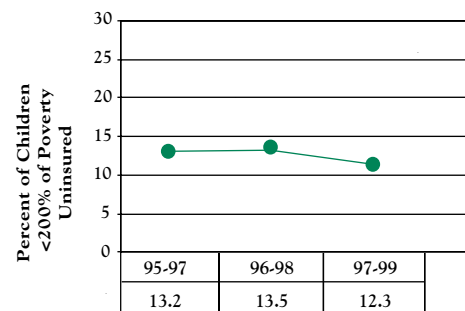
Issue: Access to health care

Why the issue matters: For children, good health requires healthy lifestyles and effective preventive and primary care starting during their mothers' pregnancies and continuing throughout infancy, childhood and adolescence. Access to quality health care services includes having health insurance with adequate coverage for preventive care and treatment, having enough physicians and other health care providers in the community, having reliable transportation to keep appointments, and having parents who value health care and seek it for their children. Communities and employers have significant roles to play in assuring that families have good health insurance benefits and access to quality care. Access is especially important for children with special health care needs who may need a variety of medical subspecialty services, emergency medical services and pediatric transport, and therapeutic services.

The American Academy of Pediatrics supports the idea that children are best served through a **medical "home"** that provides both medical and preventive care. A child with a personal physician who is familiar with the child's history and medical needs is likely to receive continuous, comprehensive and family-centered care. All young children need a familiar place that provides routine preventive care, screenings, immunizations, and treatment of illness or injury. A medical home can reduce the number of inappropriate emergency room visits and help families develop healthy lifestyles.

Where we are now: 12.3 percent of children in South Carolina under 200 percent of poverty, or approximately 128,000 children, had no health insurance from 1997-1999, according to U.S. Census estimates. Low-income children represented 42.1 percent of the 1,040,000 children in the state in the 2000 Census. Since 1997, South Carolina **Medicaid** program enrollment has increased by

Percent of S.C. Children* Uninsured Birth to 19



Data Source: CPS
*Children Under 200% of Poverty

more than 140,000 new children and youth (through March 2001). This increase has been recognized nationally and resulted from the efforts of the S.C. Department of Health and Human Services (DHHS, the Medicaid agency) and DHEC to recruit more eligible children into the program. There is still more to be done, however. More than 30,000 children are estimated to be Medicaid-eligible, but are not enrolled. The working poor have other ongoing problems. Many do not have insurance through their employer and are not eligible for public health insurance.

Over the years in which DHEC's public/private partnerships for children's health have been established and expanded, the percentage of Medicaid-enrolled children obtaining primary care has increased, from 45 percent in 1990 to 84 percent in 1999. The average number of office visits for children has also increased from only 1.5 visits per year to 4.2 visits per year.

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The challenge: Challenges to increasing access to care include maintaining and increasing the number of children insured under Medicaid, given increasing state budget difficulties; maintaining or increasing the number of children covered under private sector insurance, given economic downturns; providing and expanding Family Support Services to ensure that there is a good link between children who need to access medical services and the providers available to provide those services; and using solid evaluation data to guide outreach and public/private partnership efforts.

What we are doing: DHEC participates in partnerships with doctors and provides family support services to assist doctors in providing medical homes. DHEC partners with the private medical community through the S.C. Chapter of the American Academy of Pediatrics, the S.C. Medical Association, the state Medicaid agency and the S.C. Hospital Association. All these organizations have a mutual goal of assuring that every child in the state has a

medical home. This is particularly important for children on Medicaid, who have historically received fragmented care from a variety of providers.

DHEC's goal is to establish at least one partnership in every county. The effort began in 1991 with four partnerships, and by the end of 2001, there were 130 private-public partnerships that supported medical homes for children. A recent evaluation of these efforts is encouraging. A study was done on all children on Medicaid ages birth to three years for the period 1995 to 1999 to evaluate differences in primary care use. Nearly 89 percent of children seen in the partnership practices had at least one well-child screening, compared with 83 percent for non-partnership practices. Fewer children seen by partnership practices relied on emergency room care, 23.2 percent, compared with 28.5 percent seen by non-partnership practices.

What you can do:

- If your child has no health insurance, apply for free insurance through Partners for Healthy Children.
- Promote awareness of the Partners for Healthy Children Program among family, friends and neighbors who have children.
- See that your children get well-child checkups, immunizations and regular care from a medical home.

Resources:

CareLine
1-800-868-0404.

Child Health Insurance Program, Partners for Healthy Children
1-888-549-0820.

Children's Defense Fund
www.childrensdefense.org

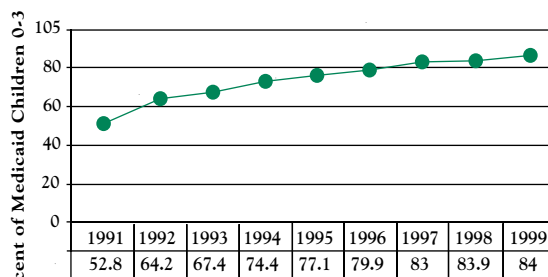
Henry J. Kaiser Family Foundation
www.kff.org

Issue: Access to oral health care

Why the issue matters: Good oral health is an essential component of overall health and well-being. Children with good oral health miss fewer school days. Early tooth loss caused by dental decay can result in failure to thrive, impaired speech development, inability to concentrate in school, and reduced self-esteem. Dental problems affect poor children more than children living in families with higher incomes. Children from families with low incomes have nearly 12 times as many restricted-activity days (e.g., days of missed school) because of dental problems compared with children from families with higher incomes.

Where we are now: Cavities and other oral health problems are a silent epidemic. Cavities are by far the most common disease of childhood. South Carolina is far from reaching the Healthy People 2010 goal of 57 percent of all children receiving preventive dental services, with many challenges to reach this goal. Another HP 2010 goal for the nation refers to water **fluoridation**, an extremely cost-effective way to ensure that children's teeth are protected against the bacteria that cause cavities. The Healthy

Percent of S.C. Children on Medicaid who Received a Primary Care Service



Data Source: S.C. Department of Health and Human Services

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People 2010 target is for 75 percent of the U.S. population to be served by community water systems with effective levels of fluoride in the water. South Carolina does not routinely monitor water systems for fluoridation, so the percent for our state is not known. Because of a lack of personnel, South Carolina has been unable to take advantage of a Centers for Disease Control and Prevention free computer program that would allow South Carolina to monitor for fluoride. For more information, read the Surgeon General's Report on oral health at www.surgeongeneral.gov/library/oralhealth.

The link between health and environment: Water systems that provide fluoride can help reduce or eliminate dental caries. Since the amount of naturally occurring fluoride in water varies in different parts of our state, it is important to monitor the fluoride levels to ensure that South Carolinians get the optimal amount to prevent cavities.

The challenge: Efforts to provide access to oral health care face many barriers:

- Dental practices are often located in the suburbs, far from the neighborhoods of children with Medicaid coverage.
- Many dental practices do not accept children or children on Medicaid, or they have long waiting lists.
- There is disagreement on whether there is a shortage of dentists in the state.
- Some patients do not show up for appointments, causing economic hardship for the dental practice.

DHEC and the S.C. Department of Health and Human Services (the Medicaid agency) are working with

providers and clients to improve access to dental care, but these partnerships will take time to develop and have an impact on the problem.

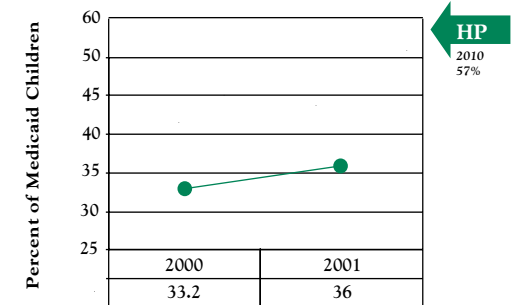
What we are doing: In 1999 the Legislature approved a dramatic increase in Medicaid reimbursement to dental providers. The S.C. Dental Association, in partnership with DHHS, DHEC and other private and public organizations, is working to increase the number of children receiving needed dental services. More dentists are now providing preventive services to children on Medicaid. For more information, contact the S.C. Dental Association at 1-803-750-2277 or DHEC's Oral Health Program at (803) 898-0731.

Schools can have an impact on the oral health problem. In 1999, the Centers for Disease Control and Prevention selected South Carolina to participate in the Healthy Schools Oral Health Project through a partnership between the S.C. Department of Education and DHEC. The Children's Oral Health Coalition uses school-linked services to focus on preventing oral disease.

What you can do: Proven cost-effective interventions do exist that can help prevent the onset of oral health diseases or treat problems once they arise, including:

- Urge children to eat healthy foods, brush and floss daily, stay away from tobacco, and drink water with fluoride.
- Make sure children have their first dental exam by age 1 and have regular dental checkups after that. Dental sealants, a plastic coating placed on permanent molars, are also effective in reducing cavities in those teeth.

S.C. Children on Medicaid Under 18 Receiving a Preventive Dental Service



Data Source: S.C. Department of Health and Human Services

Resources:

To find a dentist, contact the CareLine at [1-800-868-0404](tel:1-800-868-0404)

S.C. Dental Association
[1-803-750-2277](tel:1-803-750-2277)

DHEC's Oral Health Program
[\(803\) 898-0731](tel:(803)898-0731)

Surgeon General's Report on Oral Health
www.surgeongeneral.gov/library/oralhealth

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Issue: Childhood Immunizations

Why the issue matters: Vaccines are responsible for the control of many infectious diseases that were once common in the United States and South Carolina. Vaccines have reduced, and in some cases, eliminated, many diseases that have routinely killed or harmed many infants, children and adults. However, the viruses and bacteria that cause vaccine-preventable diseases and death still exist and can be passed on to people who are not protected by vaccines. Vaccine-preventable diseases have a costly impact, resulting in doctors' visits, hospitalizations and premature deaths. Sick children can also cause parents to lose time from work.

Immunization is the most powerful and cost-effective method of preventing serious childhood infections. Based on 1994 estimates, every dollar spent to purchase measles vaccine saved \$10.30 in direct medical costs and \$3.20 in indirect costs. Every dollar spent to administer oral poliovirus vaccine has saved \$3.40 in direct medical costs and \$2.74 in indirect societal costs.

Where we are now: Although vaccine-preventable diseases have been greatly reduced in South Carolina, it is important to maintain high levels of immunization to ensure that these diseases from the past do not come back and hurt our children. Between 1993 and 2000, the percentage of South Carolina 2-year-olds receiving a complete set of standard immunizations rose from 62 percent to 87.7 percent. South Carolina is very close to meeting the Healthy People 2010 objective of 90 percent coverage in 2-year-olds. South Carolina's vaccine coverage level is higher than the U.S. average. Currently, about 67 percent of South Carolina's children ages 2 years old and younger are vaccinated in the private sector and 33 percent by DHEC. In the past, more children received their vaccines at DHEC clinics, so this change is important.

The challenge: Although South Carolina is close to meeting the Healthy People 2010 immunization coverage objectives, challenges still remain, including: as childhood immunizations are increasingly being done in the private sector, working with and ensuring that private providers continue to maintain high levels of immunization coverage in the preschool populations; continuing to educate caregivers of the importance of childhood immunizations; explaining immunization schedules to caregivers and providers, given the increasing number of childhood immunizations available and an increasingly complex immunization schedule.

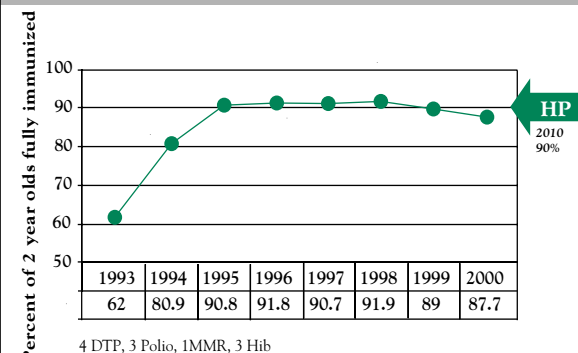
What we are doing: Calling to remind caregivers to bring children in for vaccinations is an effective strategy in improving immunization levels. DHEC uses this callback/reminder strategy more so than the private sector, which may partially explain the slight decrease in the immunization rate over the past two years in the state. DHEC is working with the medical community to ensure that our vaccination coverage levels stay at their current high level.

What you can do:

- Make sure that children in your charge are fully immunized for their age. For school-age children, schools provide information to caregivers about the immunization requirements that must be followed.

For infants and preschoolers, immunization providers (medical doctors or the health department) have information to explain immunization recommendations, the different types of immunizations, and the schedule of which vaccine should be given and when they should be given. Caregivers should become familiar with the immunization recommendations and take their children in when it is recommended to do so. Caregivers should request information about vaccines and also request that their child receive a vaccine if they think they need one.

S.C. Immunization Coverage Rates Birth-Registry Survey of Children At Age 2



Resources:

DHEC Immunization Web site:

www.scdhec.net

www.scdhec.net/hs/diseasecont/immunization

CDC Immunization Web site:

www.cdc.gov/nip

DHEC's CareLine

1-800-868-0404. [Help in finding a vaccine provider](#)

DHEC Division of Immunization

1-803-898-0720

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Issue: Injuries — Motor Vehicle Crashes

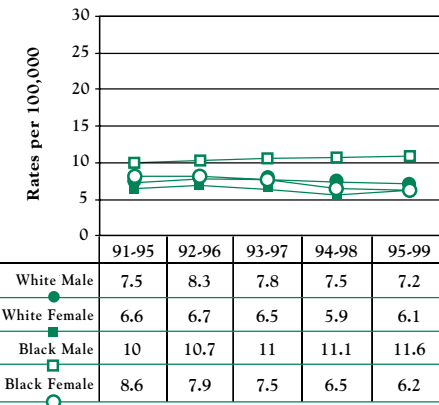
Why the issue matters: Motor vehicle crashes are among the leading causes of injuries and can result in a visit to the emergency room, hospitalization or death. Motor vehicle crashes are the leading cause of death among adolescents ages 15-19. Factors contributing to motor-vehicle related injuries include speed, failure to properly use safety restraint systems, driver distraction and alcohol.

Where we are now: There is a significant difference in emergency department visits, hospitalizations, and fatalities involving children from birth through 14 years old and 15- to 19-year-olds, and these differences have per-

sisted over the years. During 1991-1999, motor vehicle crash-related emergency department visits involving children from birth through 14 increased, and the greatest increase involved the black-and-other race group. Also, emergency department visits increased for older children ages 15-19, and racial differences are apparent. Among teens 15-19, whites visited the emergency room more frequently than the black-and-other group. Regarding hospitalizations during 1996-1999, there was a drop involving birth through 14 year old whites, no significant change among black-and-other males, and a considerable increase involving black-and-other females.

Injury of any type and regardless of intent remains the primary cause of death among children ages 1-14. The difference in motor vehicle-related deaths involving younger

Five-Year Death Rates Due to Motor Vehicle Crashes Ages 0-14



Data Source: Vital Statistics, SCDHEC

children and 15- to 19-year-old adolescents is remarkable. Although teenagers represent only 5 percent of all drivers in the state, they represent 14 percent of all motor vehicle crashes. There are also clear race and gender differences in the risk of a motor vehicle crash-related death. Among our children from birth through 14 years, decreasing death rates are noted for all groups except black-and-other males where the five-year rate climbed from 10 per 100,000 in 1991-1995 to 11.6 in 1995-1999. This compares to a 1995-1999 death rate of 7.2 for white males, 6.1 for white females, and 6.2 for black-and-other females. However, among the 15- to 19-year-olds, while the death rate has increased from 36.6 to 39.9 over the same period for black-and-other males, white males stand out with an alarming death rate of 57.8 per 100,000. The good news is that this rate does not appear to be climbing. Black-and-other females have maintained the lowest motor vehicle-related death rate throughout the 1991-1995 to 1995-1999

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period, and the current rate is 16.5 per 100,000 compared to a rate of 30.4 for white females.

Speeding is an important contributor to motor vehicle crashes. According to the S.C. Department of Transportation, speeding was a factor in 47 percent of the 1,065 road deaths in 1999. This rate is much higher than the national rate of 30 percent. This puts South Carolina second to Alaska (50 percent) in the highest road death rate in the nation. Clearly, tighter enforcement of speed limits would be beneficial toward reducing fatal motor vehicle crashes.

The 1999 **S.C. Youth Risk Behavior Survey** has data on youth behaviors related to injuries. The proportion of students reporting that they rarely or never use a seat belt was down from 25.3 percent in 1997 to 21.9 percent in 1999. Between 1991 and 1999, youth also reported less drinking and driving, which decreased from 16.7 percent to 15.4 percent, and those who rode with a drinking driver also declined from 39.3 percent to 34.6 percent. The only worsening trend was among black females: 4.5 percent reported driving after drinking in 1991, which increased to 5.4 percent in 1999.

The link between health and the environment: State and local leaders can address strong laws that encourage safe highways and safer vehicles. Reducing urban sprawl and promoting mass transit would reduce the amount of time teens and families spend in cars.

The challenge: Reduce motor vehicle crashes involving children and teens.

What you can do: Policy, legal and community efforts should focus on

- Tighter enforcement of speed limits;
- Increasing the number of teens with knowledge and skills to address drinking and driving, riding with a driver who has been drinking, and use of seat belts;

- Development of policies and laws that monitor behavior such as seat belt use and advocacy for safety technology advances;

- Consistent and widespread enforcement of seat belt and traffic laws - especially speed limits and banning sources of likely distractions among new drivers such as loud music in cars, cell phones, head/ear phones, and other teens riding with teen drivers; and

- Installation and use of safety devices in motor vehicles such as tire warning (inflation/pressure) devices to reduce fatal crashes. Full installation of crossover barriers would also help prevent fatal motor vehicle crashes - the state has made some progress here.

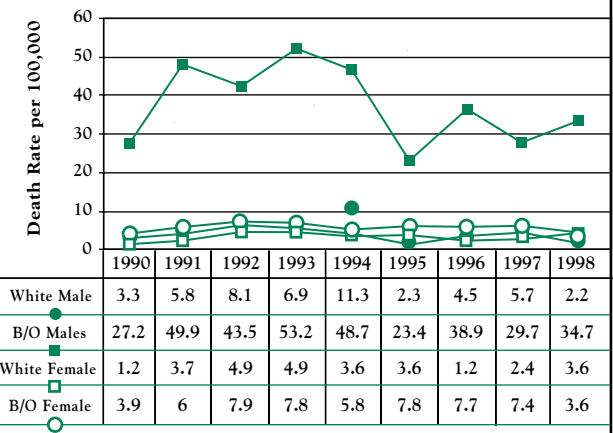
South Carolina has joined 32 other states in enacting graduated driving licensing (GDL), which restricts driving hours and mandates supervision for new drivers ages 15-17. North Carolina experienced a sharp drop in automobile death rates from five per 10,000 population in 1996 to two per 10,000 population in 1999 after instituting GDL, according to the *Journal of the American Medical Association*.

Issue: Injuries — Violence

Why the issue matters: Violence is a serious and persistent public health issue in this country. Violence ranges from simple assault to homicide (intentional murder), and the injuries can result in an emergency room visit, hospitalization, and even death.

Violence upon children 6 and under occurs mostly in the form of **child abuse**. Reporting of such maltreatment most often comes from sources other than the victim or a family member. When an injury involving our youngest children requires some level of medical assistance, the contribution of child abuse might be either hidden or simply overlooked. As a result, the psychological effects of child

Homicide Rates by Firearm Among 15-19 Year Olds, by Race-Sex Groups South Carolina Residents, 1990-2000



Data Source: Vital Statistics, SCDHEC

abuse upon the child might not be recognized for years, if at all.

Violence resulting in death usually involves a gun. The risk of **homicide** in the home is three times greater in households with guns. Murders of youths 19 and under involving guns increased 125 percent between 1984 and 1990. Injuries can also be costly; it costs more than \$14,000 to treat each child wounded by gunfire - enough to pay for a full year of college. Every day, 16 American children are killed with guns. More than 1.2 million elementary-aged, latchkey children have access to guns in their homes. Since February 1997, 16 people have been shot to death in schools in the United States, and 25 others have been wounded.

Blacks are far more likely to be murdered than whites. Homicide is the leading cause of death among black men ages 15-24 years and the second leading cause of death

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among black women of the same age group. Nearly two-thirds of black homicides were drug-related, and drug dealers and gang-related activity have been cited as the major cause of black-on-black crime. In the U.S., between 1976 and 1999, other blacks killed 94 percent of all black homicide victims.

Where we are now: The homicide problem is worsening in South Carolina as well as across the nation:

- In South Carolina, from 1996-99, the number of assault-related emergency department visits increased for all children and adolescents from birth to 19. Among this age group, black males had more visits than all other groups, followed very closely by white males, and black females had more frequent visits than white females. Hospital emergency room departments treat four children for gunshot wounds for every child killed by gunfire.
- Nationally, from 1979 to 1989, the firearm homicide death rate for youth 15-19 increased 61 percent while the non-firearm homicide death rate decreased 29 percent. In South Carolina, among 15-19 year olds, the firearm homicide rate climbed during 1995-1998 overall, and this increase largely involved black-and-other males. The rate for black males is 31.1 deaths per 100,000 and is almost 10 times higher than the rate of 3.4 per 100,000 for white males. The rate for black females is 6.6 per 100,000 and is more than twice the rate of 2.4 per 100,000 for white females.

The link between health and the environment: Programs, laws and policies can focus on reducing violent deaths and assaults on children to assure they can grow and develop in an injury-free environment.

The challenge: Violence is a complicated issue that requires widespread community involvement. Creating

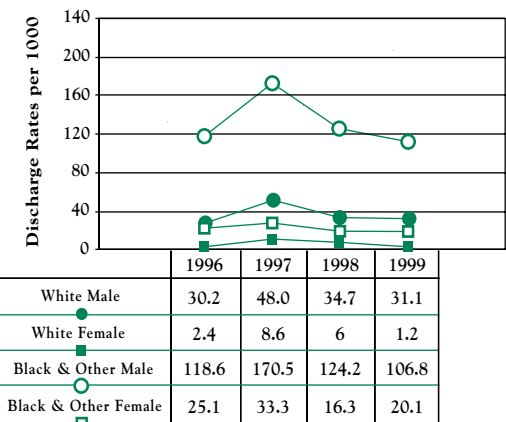
coalitions around this issue requires education and bringing nontraditional partners to the table. Awareness of the problem must be raised, and effective interventions must be developed.

What you can do: Assault-related hospitalizations, along with the firearm-related homicides involving black males constitutes an epidemic. Strong prevention strategies are needed to address this problem.

- Adolescents not enrolled in school are at greater risk of being involved in violence-related behavior than their peers enrolled in school. Make sure adolescents in your charge stay in school.
- Physical fights can lead to serious injury, and carrying a weapon can cause the most serious injuries resulting from violence. Eliminate access to guns in the home. Greater control of weapon carrying, and certainly less access to automatic weapons, could prevent a violent argument from resulting in death, disability or serious injury.

- Community advocates must work with law enforcement to rid drug-infested neighborhoods of drug dealers and gangs of their senseless murderous competition. Residents of drug-infested neighborhoods are often aware of the identity of perpetrators and can provide much needed assistance to law enforcement.

Hospital Discharge Rates Due To Assault, Ages 15-19



Data Source: S.C. Budget & Control Board Office of Research and Statistics

Resources:

The State Child Fatality Advisory Committee
(803) 896-7033

The State Law Enforcement Division
www.sled.state.sc.us - Crime statistics

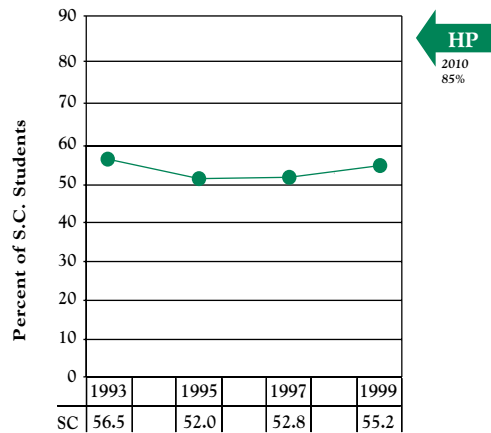
CDC National Center for Injury Prevention and Control
www.cdc.gov/ncipc
S.C. KidsCount <http://167.7.127.238/kc/>

DHEC Office of Injury Prevention
(803) 898-0755

The Community Action Forum (CAF)
www.ori.org/~keiths/caf/

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Percentage of S.C. Students Who Exercised in the Last Week



Data Source: S.C. Youth Risk Behavior Survey



Issue: Overweight and Obesity

Why the issue matters: DHEC's 1999 Report on the Impact of Obesity on Health in South Carolina concluded that:

Overweight and obesity are of epidemic proportions in South Carolina. ... Overweight and obesity are strongly related to the high rates of diabetes, coronary heart disease and stroke that afflict our state. ... Obesity in childhood is a predictor of adult obesity. However, the prevention and management of childhood obesity must be addressed differently than obesity in adults.

It is important to establish healthy behaviors in childhood to prevent chronic disease later in life. Poor dietary habits and sedentary lifestyles contribute to the increase of obesity in youth.

Where we are now: The percentage of children and adolescents who are overweight and obese in South Carolina is now at its highest ever. Excess weight in childhood has been found to predict excess weight in adults. One in five children and over one in two adults are overweight in South Carolina. One in four high school-aged children is overweight or at risk for overweight in South Carolina.

According to the 1999 **South Carolina Youth Risk Behavior Survey (YRBS):**

- 14.6 percent of high school students were at risk for becoming overweight, and 10.7 percent were overweight.
- African American high schoolers were more likely to be overweight than white teens. Boys were more likely than girls to be overweight.
- Statewide, 27.8 percent of students described themselves as overweight, with girls more likely than boys to consider themselves overweight, despite the finding that more boys actually were overweight.

- Although physical activity among children and adolescents has important health benefits, many children are less active than recommended, and inactivity increases during adolescence. Approximately 45 percent of students statewide were physically inactive during the week preceding the YRBS.

- 47.5 percent of the students surveyed watched more than two hours of television on an average school day.

- Only 18.1 percent of high school students attended daily physical education classes.

These findings show the need for parents, educators and health care providers to become positive role models and to be actively involved in the promotion of healthy behaviors in children and adolescents.

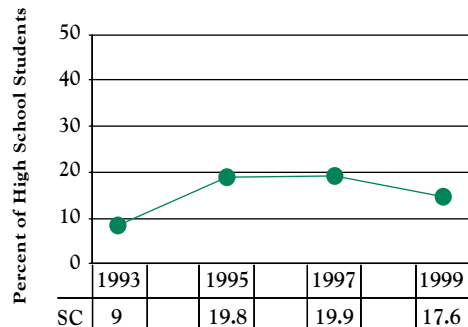
The link between health and the environment: A child's environment should offer opportunities for physical activity, yet today children watch television, play computer games, and get little exercise. Many schools offer little or no physical education. Automobile travel has replaced walking and bicycling, and many streets lack sidewalks for safe walking.

The challenge: Health promotion efforts to combat the epidemics of overweight and sedentary lifestyles are critically needed if the state is to improve the health of children, youth and adults. Changes in policies and increasing social and environmental supports for healthy lifestyles are very effective approaches. Examples include providing healthy school lunch choices, eliminating competitive snack foods and soft drink machines from school lunchrooms, and building sidewalks and recreational facilities to provide opportunities for physical activity.

According to the 1999 Report on the Impact of Obesity on Health in South Carolina, there is a lack of coordination and infrastructure to adequately address the

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Percentage of S.C. Students Who Ate Five Fruits and Vegetables a Day



Data Source: S.C. Youth Risk Behavior Survey

Tobacco

Tobacco use is another behavior that threatens the health of children and adolescents. Although cigarette smoking is the single most preventable cause of disease and death, 1999 YRBS data show that the percentage of current cigarette users among adolescents in South Carolina increased from 1991, and is higher than the national average. The survey found that 36 percent of teens reported smoking within the past 30 days. Overall, white students were significantly more likely than African American students to report current cigarette use. About 45.9 percent of white students smoked, compared with 22.8 percent of African American students.

complex problem of obesity. There is a lack of resources available to at-risk populations in the state who wish to lose weight to improve their health. There is a need for implementation of statewide obesity prevention interventions targeting children. There is a lack of funding to implement efforts to stem the tide of the rising rates of obesity in South Carolina.

What we are doing: Some public health districts and other organizations around the state are organizing weight management programs. For example, in the Appalachia I Public Health District (Anderson and Oconee counties), DHEC has a weight management program called Just Do It for children ages 6 to 12. The program uses a team approach to provide nutrition, social work and physical activity supports to help overweight children reduce weight, along with parental education and counseling. Participants are given materials to help them plan, assess and record their food and physical activity habits.

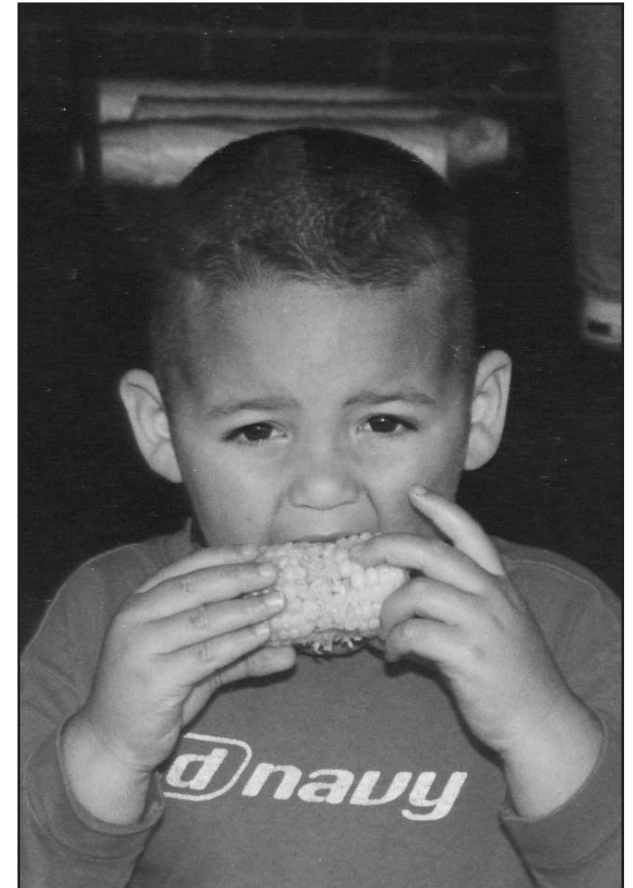
What you can do:

- Promote physical activity for your children - set a good example by being physically active yourself; and
- Prepare healthy meals at home and encourage healthy food choices at away-from-home meals.

Resources:

The Centers for Disease Control and Prevention's Division of Adolescent and School Health
www.cdc.gov/nccdphp/dash/index.htm

The Nemours Foundation
www.kidshealth.org



Increase the quality and years of healthy life for seniors

South Carolina is a state with dramatic growth in its senior citizen population. The 65 and older population is projected to increase by more than 75 percent by 2020 and more than double by 2025. Projections show that one third of South Carolinians will be age 65 or older by 2020. The greatest percent population increases from 1980 to 1990 occurred among those 75 and older. The state added 88,000 people age 65 and older during the 1990s, a 22 percent growth rate and nearly double the national average. South Carolina also had 50,300 people older than age 85, a 63 percent increase from a decade ago. Now, more than ever, preventive care must accompany the aging process. Reaching age 45 is a critical milestone in a person's life, and health behaviors up to this age and forward determine the quality and years of healthy life for seniors. Planning for our aging must ensure our bodies and minds are ready for the transitions from age 45, to age 55, to age 65, and beyond.

Issue: Healthy aging

Why the issue matters: Reaching our senior years in good health and maintaining that health is important to us as individuals and as a society. Understanding the particular health risks facing the elderly and taking appropriate actions can help delay or prevent the significant negative impact on independent functioning that frailty and impairment may impose.

Growth in the population of seniors needing long-term care and health care, the diminishing capacity of family members to provide long-term care, changes in medical technology, and rising health care costs have resulted in increasing obligations for federal and state governments as well as for families. Seniors are the highest users of health care services. As recently as 1990, South Carolina's mature adult population used 33 percent of the state's health budget. Absent substantial changes, by 2020 this age group will use 96.4 percent of South Carolina's health care dollars.

Research has shown that disease and disability are not inevitable consequences of growing old. Support systems must be in place, however, to provide a healthy, safe environment for seniors that emphasizes disease and disability prevention as well as remaining at home rather than in an institution. Social supports, such as volunteer opportunities, also provide an avenue for seniors to contribute to their communities while others gain from their knowledge and experience.

Where we are now: Many of our older South Carolinians are proud people who have worked all their lives, paid taxes, supported their community and state, and have never required government assistance. But many are just above the poverty level. According to the S.C. Department of Health and Human Services (DHHS), 43.2 percent of all South Carolina seniors over age 65 are under 200 percent of the poverty level.



The S.C. Aging Network, housed at DHHS and primarily funded by the federal Older Americans Act, provides services to seniors 60 and older regardless of income. These services include personal and home care, home-delivered or group meals, and transportation. These services help keep seniors functioning at home and out of institutions. However, the network has about 4,600 seniors on a waiting list for services. Additionally, the S.C. Community Long Term Care Program has a waiting list of 4,000.

Increase the quality and years of healthy life for seniors

As people age, their ability to maintain their independence decreases. The percent of people with disabilities increases significantly with age, as does the degree of disability.

- For people over 80, 71.5 percent have a disability, and 53.5 percent have serious disabilities.
- Thirty percent of individuals 65 and older have significant functional or cognitive impairments requiring long-term care services.
- In South Carolina, there are 190 nursing homes with 18,324 beds, and 92 percent of them are used by persons 65 and older.
- South Carolina ranks seventh among nine Southeastern states in state funding per person served with aging-related home and community-based services. South Carolina spends \$54.89 per person as compared to the Southeastern average of \$336.74.

The cost of institutionalization can be devastating. One year in a nursing home can cost from \$34,000 to \$40,000. An investment of \$1,300 per person in state funds for preventive Aging Network home and community-based services may delay costly institutionalization from six months to a year or longer.

The link between health and the environment: Healthy communities can be the impetus for healthy aging by making environments more activity-based and user friendly to seniors. Planning should include creating communities with bike paths, sidewalks, and neighborhood grocery stores. Safer communities and mass transportation are central issues for our aging population because they provide basic access to services that younger South Carolinians take for granted.



The challenge: Although increasing the quality and years of healthy life for seniors is a DHEC strategic goal, many of the agency's plans and programs to assist seniors in remaining at home have been put on hold because of budget constraints.

Communities can assist their aging population by assuring that supports and services are available to promote healthy behaviors and health improvements. Senior citizens should be involved in any efforts to conduct community planning that promotes increasing activity levels and independence for older residents. Successful initiatives could focus on enabling senior residents to age in place while maintaining the quality and years of their lives. Investments in neighborhood safety, bike paths, or sidewalks and crosswalks provide opportunities for improved quality of life.

Safe, senior-focused housing is needed and can be accomplished by working with developers to assure larger door openings for wheelchair accessibility for homes and showers. Adaptations are easily made for door handles,

and ramps can assure ingress and egress quickly in the event of a fire or health emergency.

Health education and counseling are essential to create positive behavior change and to sustain that change. The benefits of increased activity and recreation can be promoted and include decreased depression, decreased isolation, increased mobility, and a reduced risk of chronic disease and disability.

What we are doing: South Carolina provides many services for seniors through a number of public and private organizations. DHEC continues to actively encourage seniors to receive **influenza and pneumonia immunizations**. DHEC also monitors the health and safety at adult day cares, nursing homes and community residential care facilities. Home health services provided by DHEC allow many seniors to receive care at home and avoid costly institutionalization.

What you can do:

- Plan for your senior years and for any catastrophic events that might require long-term care.
- If you will be a caregiver, know where to seek and receive support services.
- Help seniors manage their medical needs and medicines. Conduct a safety audit in their homes to assure no hidden dangers could cause injuries.
- Provide transportation to seniors. Volunteer for community services aimed at seniors, such as Meals on Wheels.
- If you are a senior, seek medical screenings for chronic diseases. Stay physically and mentally active.

Increase the quality and years of healthy life for seniors

Resources:

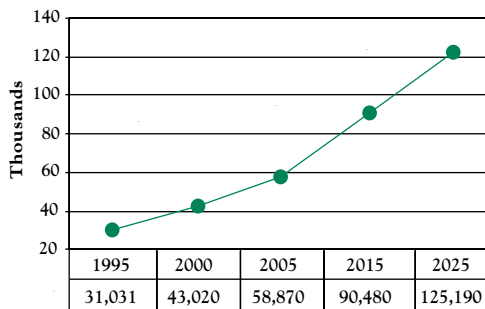
Alzheimer's Association
www.alz.org

S.C. Department of Health and Human Services
www.dhhs.state.sc.us

The National Council on Aging
(202) 479-1200 www.ncoa.org

AARP
www.aarp.org

Projected Alzheimer's Patients Age 65+ in SC



Data Source: USC School of Public Health, Dementia and Alzheimer's Estimates

Alzheimer's takes toll on seniors

As people age, both the nation and the state will face the soaring costs of Alzheimer's disease and related dementia. Alzheimer's disease is a degenerative brain disease that usually begins gradually, causing a person to forget recent events or familiar tasks. The disease eventually causes confusion, personality and behavior changes, and impaired judgment. Eventually, most people with Alzheimer's disease become unable to care for themselves.

The lifetime cost of care for an Alzheimer's patient is \$174,000, according to current estimates. Three percent of all people ages 65-74 will have Alzheimer's disease, according to the National Alzheimer's Association. Among those 75-84, 18.7 percent will have it. Of those 85 and older, 47.2 percent will have the disease.

The number of Alzheimer's patients in South Carolina will increase from 43,000 in 2000 to 125,000 in 2025, according to estimates. It is estimated that this growth, together with health care inflation of 5 percent annually, will have a total impact on the state, insurance companies, and families of \$7.7 billion in 2025.

The Alzheimer's Disease Registry/Aging Project maintains a database on individuals with Alzheimer's disease in the state of South Carolina. The registry provides training for professionals and direct care staff to help them better understand, assess, and manage clients with dementia. For more information, call (803) 777-5337.

Issue: Vaccinations for seniors

Why the issue matters: With the aging of South Carolina's population, increasing numbers of adults will be at risk for influenza and pneumococcal disease. According to 1999 South Carolina vital and morbidity statistics, these two infectious diseases together are the seventh leading cause of death. A total of 858 deaths were attributed to influenza and pneumonia in 1999, with the majority of these deaths occurring in South Carolina residents aged 75 years and older. Persons with high-risk conditions (that is, heart disease, diabetes and chronic respiratory disease) remain at increased risk for these diseases, as do persons living in institutional settings.

Adult immunization results in cost savings. On average, costs of influenza and pneumonia hospitalization are 30 to 33 percent more than costs of other illnesses requiring hospitalizations. In 1998, there were 23,245 hospitalizations for South Carolinians aged 85 and older for influenza and pneumonia. They spent an average of seven days per hospitalization. Total charges were almost \$275 million, with an average cost of \$11,829 per hospitalization.

Reductions of 34 to 44 percent in physician visits, 33 to 45 percent in lost workdays, and 25 percent in antibiotic use have been reported in studies comparing vaccinated people to unvaccinated people.

Where we are now: Annual influenza vaccination is recommended for everyone 50 years old and older, regardless of the presence of chronic illness. Pneumonia vaccination is recommended for all adults ages 65 and older and for adults with normal immune systems who have chronic illnesses. South Carolina's coverage levels for both influenza and pneumococcal vaccinations among persons 65 years old and older are higher than the national average. In 2000, 69.7 percent of South Carolinians 65 years old and older had received a flu shot compared to the 66.9

Increase the quality and years of healthy life for seniors

percent coverage level for the nation, and 59.7 percent had been vaccinated against pneumonia compared to 54.1 percent for the nation.

Disparities exist between white and black-and-other races in vaccination coverage. Blacks and other races have a 61.9 percent vaccination rate for influenza, while whites have a 72.3 percent coverage rate. Blacks and other races have a 44.4 percent coverage rate for pneumococcal vaccination, while whites have a 63.9 percent coverage rate.

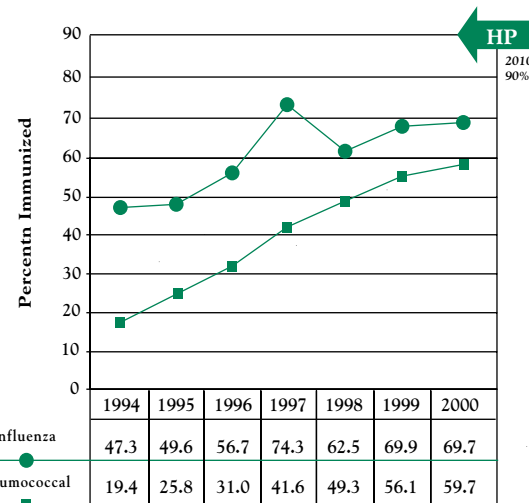
The challenge: Immunization levels of 90 percent for adult influenza and pneumococcal vaccinations, the Healthy People 2010 objective, have yet to be realized in South Carolina and will require increased efforts to achieve. In order to achieve and sustain adult vaccination coverage levels of 90 percent among adults in future years, DHEC must consider both promoting adult vaccination in medical practices throughout the state and expanding adult immunization services within DHEC.

What we are doing: DHEC is the largest single provider of influenza vaccinations in South Carolina. DHEC also monitors and investigates disease outbreaks and manages a statewide immunization registry. DHEC visits all immunization providers to ensure accountability for public vaccine handling, storage and use

What you can do:

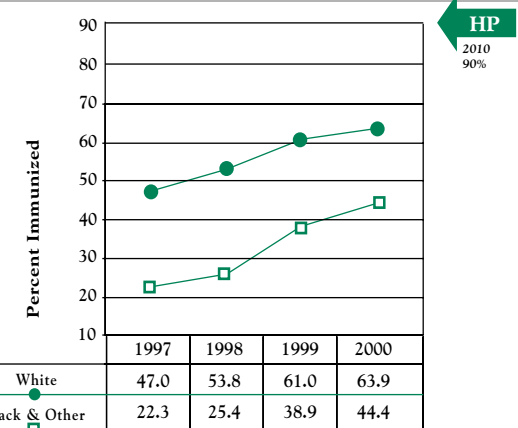
- Get a flu shot annually if you are 50 or older.
- Get a pneumonia shot if you are 65 or older.
- Encourage senior neighbors, relatives and friends to get vaccinations.

Influenza and Pneumonia Vaccination Coverage Levels Among Persons Age 65 and Older



Data Source: SCDHEC 2000 SC BRFS 1999 U.S. BRFS

Pneumococcal Vaccination Coverage Levels By Race Among Persons Age 65 and Older



Data Source: SCDHEC-SC 2000 BRFS
1999 U.S. BRFS

Increase the quality and years of healthy life for seniors

Issue: Arthritis

Why the issue matters: Arthritis and other rheumatic conditions are among the most common chronic conditions and the leading cause of disability in the United States. These conditions frequently lead to limitations in work, recreation and daily activities, including basic self-care. Some types of arthritis can result in life-threatening complications. Arthritis encompasses more than 100 diseases and conditions affecting joints, the surrounding tissues, and other connective tissues. These diseases and conditions include osteoarthritis, rheumatoid arthritis, gout, fibromyalgia, bursitis, rheumatic fever, and Lyme disease. Three of the most common forms of arthritis are osteoarthritis, rheumatoid arthritis, and fibromyalgia.

Where we are now: Nationally 43 million people have arthritis, costing the country nearly \$65 billion annually. Arthritis is second only to heart disease as a cause of work disability. The number of Americans with arthritis is expected to rise to more than 59 million people by the year 2020, the increase largely due to the aging of the population.

According to a study by Dorothy D. Dunlap and colleagues from Northwestern University, black and Hispanic adults are more likely to suffer from arthritis than whites. The 2000 U.S. Census showed that Hispanics are the fastest growing minority in South Carolina, increasing by 15.1 percent between 1990 and 1999.

The impact of arthritis in South Carolina is significant. According to the 2000 S.C. Behavioral Risk Factor Surveillance Survey (BRFSS), approximately 906,003, or 32 percent, of non-institutionalized adults in South Carolina have arthritis. This is twice the rate estimated by the Centers for Disease Control and Prevention (CDC) for the state in 1999 (14 percent - 15.9 percent of people age 15 and over). People with arthritis were defined as

Number and Percentage Distribution of Hospital Discharges and Emergency Room Visits for All Conditions and for Primary Diagnosis of Arthritis and other Rheumatic Conditions, by Patient Age and Sex, 1999

Characteristic	Hospital		Emergency Room	
	Number	Percent	Number	Percent
All conditions	486,373		1,286,065	
Arthritis and other rheumatic conditions	9,297	100.0	35,394	100.0
Age(years)				
<15	202	2.2	1,903	5.4
15-44	1,190	12.8	17,854	50.5
45-64	3,307	35.6	9,707	27.4
≥65	4,580	49.4	5,891	16.7
Sex				
Male	3,565	38.3	15,319	43.3
Female	5,732	61.7	20,074	56.7

Data Source: SC Budget and Control Board Office of Research & Statistics

those having either chronic joint symptoms (CJS) or doctor-diagnosed arthritis. Twenty-five percent of South Carolina adults reported doctor-diagnosed arthritis, 20 percent reported CJS, and 22 percent reported activity limitation due to CJS. The prevalence rate of both arthritis and activity limitation from CJS was higher for women, increased with age, and decreased with higher education levels.

Arthritis and other rheumatic conditions accounted for more than 9,200 hospitalizations and 35,000 emergency room visits in 1999, costing the state more than \$175 million.

Four self-reported general health-related quality of life questions from the SC BRFSS cover overall health and recent physical health, mental health, and activity limitation for people with arthritis in South Carolina. When asked about their general health status, fewer peo-

ple with arthritis reported at least good health compared to 93 percent of persons without arthritis. People with arthritis reported a higher number of days of poor mental health, poor physical health, and limitation in usual activities. People with arthritis reported a higher number of days of depression and anxiety than persons without arthritis. Additionally, persons with arthritis reported six more days (in the last 30 days) of pain and five fewer days of feeling very healthy and full of energy than persons without arthritis.

The challenge: Barriers to reducing the burden of arthritis in South Carolina include a lack of arthritis prevention and support programs, particularly in rural areas. Other difficulties people with arthritis face include accessing medical care, affording prescription medications and overcoming transportation barriers. Public awareness of arthritis is very limited in South Carolina.

The Carolinas Chapter of the Arthritis Foundation covers both South Carolina and North Carolina. The chapter's location in Charlotte, its limited budget, and its historical orientation to North Carolina hinder the chapter's ability to be as responsive to South Carolina. A preliminary needs assessment completed by the Arthritis Steering Committee (a group of citizen stakeholders) indicates that arthritis programs, services, and treatment and care are available, but considerably limited for the amount of need. They are offered in key regions of the state, but far less so in the rural areas where the need is greater, based on the S.C. BRFSS findings.

Also, current data sources do not capture the majority of patient encounters with the health-care system. Data from physician encounters are needed to provide information on certain types of arthritis and information on medications and other treatments.

Increase the quality and years of healthy life for seniors

What we are doing:

- DHEC received CDC funding in October 1999 to develop and implement a public health response to arthritis in South Carolina. Current funding continues through October 2004. Partnerships with the Arthritis Steering Committee have resulted in the 2001-2005 State Plan for Arthritis Action in South Carolina. Documented in this first five-year plan are strategies for reducing the burden of arthritis in the state.

- **A partnership** with the Arthritis Foundation, Carolinas Chapter, has provided training for nurses and social workers from DHEC public health districts on self-help courses designed to teach people self-management. Studies indicate self-management programs can reduce pain by as much as 20 percent, and improve overall patient health. Public health department medical social workers and nursing staff offer some arthritis-specific individual and group services, including social work services, nutritional counseling, and nursing services for education on disease management. Home Health Services offers physical therapy and occupational therapy. SCAP also offers technical assistance to help organize new support groups in underserved areas and offers caregiver support services in local public health departments.

- **A general health communications campaign** will be conducted this year to improve arthritis awareness in the state. The campaign will urge people to see a health provider, be screened and receive diagnosis, support and care. Also, SCAP will partner with the Arthritis Foundation to conduct a needs assessment that will guide intervention design and messages for targeted audiences.

- Partnerships developed will assist in reaching the goals of SCAP. Key partnerships include the Arthritis Foundation of the Carolinas, Blue Cross Blue Shield of

SC, University of South Carolina, Central Midlands Council Of Governments, The MUSC Bone and Joint Center, the S.C. Budget and Control Board's Office of Research and Statistics, Winthrop University Department of Human Nutrition, the Greenville Arthritis Support Group, Conway Hospital and Fitness Center, Dr. Mitchell Feinman, MD, FACP, and the Hand and Upper Extremity Rehabilitation Department of St. Francis Health System.

What you can do:

- Volunteer to work in local health departments.
- Become involved in regional arthritis councils.

Resources:

The Arthritis Prevention and Control Program
S.C. Department of Health and Environmental Control
(803) 898-0760 http://dhecnet:2/hs/women_arthritis

Arthritis Foundation, Carolinas Chapter
(704) 529-5166 and 1-800-883-8806

Issue: Cancer among seniors

Why the issue matters: Cancer is the second leading cause of death in the United States and in South Carolina and the leading cause of death in people ages 45-74 years. While everyone is at risk, the greatest risk factor for any cancer is increasing age. As people age, their risk of developing cancer also increases. More than 75 percent of all cancers in South Carolina are diagnosed in people aged 55 and older.

Where we are now: An estimated 1.3 million new cancer cases will be diagnosed in 2002 in the United States,

which is more than 3,500 cases per day; approximately 17,375 new cancer cases are expected to be diagnosed in South Carolina. In 2002, more than 553,000 Americans are expected to die of cancer, which is more than 1,500 people per day; approximately 7,730 South Carolinians will die of cancer in 2002.

Using estimates from the National Institutes of Health, the overall annual cost of cancer in South Carolina is approximately \$2.6 billion; \$869 million for direct medical costs (total of all health expenditures), \$217 million for indirect costs (cost of lost productivity due to illness), and \$1.5 billion for indirect death costs (cost of lost productivity due to premature death). Insurance status and barriers to health care may affect the cost of treating cancer in this country.

The challenge: Cancer is not one disease, but a group of diseases. For example, lung cancer is a completely different disease than colorectal cancer or prostate cancer. All cancers have one thing in common: If they are not treated properly, they can grow and spread uncontrollably, which can result in death. Cancer is caused by many factors; some are modifiable, such as smoking, and others cannot be changed, such as age.

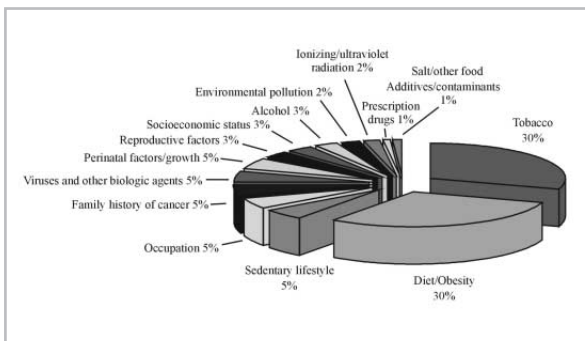
Reducing certain risk factors can help prevent many cancers. Almost two-thirds of all cancer deaths are related to modifiable risk factors such as tobacco use, obesity, and physical inactivity. Regular examinations by a health care provider can result in detection of cancers of the breast, colon, rectum, cervix, prostate, testis and oral cavity. When these cancers are detected early, treatment is more likely to be successful and survival the greatest.

What we are doing:

- **S. C. Central Cancer Registry:** The South Carolina Central Cancer Registry (SCCCR) was established in the DHEC Office of Public Health Statistics and Information

Increase the quality and years of healthy life for seniors

Causes of Cancer in the United States



Data Source: Cancer Causes & Control, Harvard Report on Cancer Prevention, 1996

Systems in 1994, when DHEC was awarded five-year funds from the Centers for Disease Control and Prevention's National Program of Cancer Registries to plan and implement a population-based data reporting system. The purpose of the registry is to measure cancer incidence and to study cancer trends in South Carolina communities and subpopulations. In 1996, enabling legislation was passed by the S.C. General Assembly, and data collection began.

SCCCR provides critical data to help identify and monitor trends in cancer incidence and death over time; guide cancer control planning and evaluation; help allocate health resources; and advance clinical, epidemiologic, and health services research; and to respond to community cancer concerns. Additionally, the SCCCR conducts cancer data-collection activities and develops policies and procedures for central registry operations.

SCCCR achieved the GOLD level of certification by the North American Association of Central Cancer Registries for completeness, timeliness and quality of its 1997 and 1998 data. The first multiyear report was pub-

lished by the SCCCR in 2001. Entitled *S.C. Cancer Facts and Figures*, this comprehensive report contains information about South Carolina cancer incidence and death, risk factors for specific cancer types, and American Cancer Society guidelines for early detection.

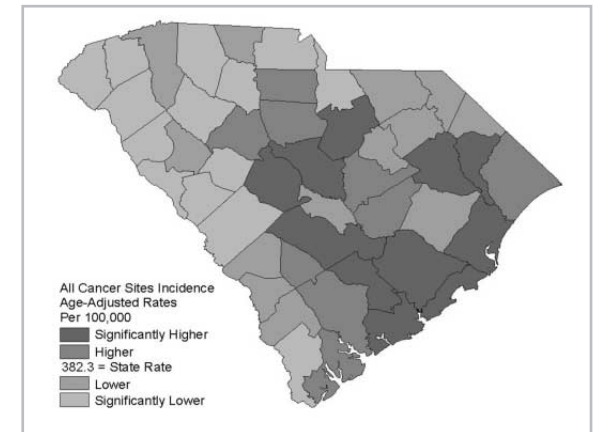
- **Best Chance Network:** The Best Chance Network (BCN) in South Carolina is part of a national effort funded by the Centers for Disease Control and Prevention to provide free breast and cervical cancer screening services to underserved women. DHEC receives funding to implement this program statewide to women ages 47-64 who meet income and insurance guidelines. Free Pap smears, pelvic exams, clinical breast exams, and mammograms are offered by private physicians and nurse practitioners. The goal of the program is to detect these cancers early when they are most effectively treated to prevent unnecessary death.

DHEC contracts with the American Cancer Society, Southeast Division, to deliver public and professional education and to coordinate services through provider offices.

Since 1992, the BCN program has screened nearly 50,000 women. On Oct. 24, 2000, President Bill Clinton signed the Breast and Cervical Cancer Treatment Act into law. This represents a significant milestone for the national program as well as for BCN. Before the act, treatment was provided through in-kind donations of committed medical facilities and physicians. This program has contributed significantly toward reducing death and illness from breast and cervical cancers.

- **State-Aid Cancer Program:** In 1939, the S.C. Board of Health joined the South Carolina Medical Association (SCMA) in a cooperative plan to provide health services to indigent people with cancer. The SCMA appointed a statewide Cancer Commission consisting of one private physician from each of the 12 medical districts in South Carolina, and in 1941, the state Legislature made the first of continuing annual appropriations for the treatment of

South Carolina All Cancer Sites Incidence By County, 1996-1998



Data Source: DHEC Bureau of Air Quality

indigent persons with cancer. Nine clinics were established in cooperation with the hospitals and their physician staff. This unique collaboration has grown into the State-Aid Cancer Program. The program currently has five hospital-based clinics: Anderson Area Medical Center, Greenville Memorial Hospital, McLeod Regional Medical Center, Self Memorial Hospital and Spartanburg Regional Medical Center.

The State-Aid Cancer Program has had the interest and support of the medical profession, particularly those physicians who treat the many cancer patients who cannot afford the high costs of treatment for this disease. Health care options for individuals are severely limited unless they have private insurance. Many people believe that Medicaid pays for medical care for all poor people in South Carolina, but because of the strict eligibility requirements, Medicaid is hard to obtain. Many people

Increase the quality and years of healthy life for seniors

who are low income and have no health insurance still may not qualify for Medicaid. This means that thousands of people, most of them working people, face the disease of cancer with no medical care. The State-Aid Cancer Program serves those individuals.

- **South Carolina Women's Cancer Coalition (WCC):** The WCC is a statewide nonprofit coalition whose mission is to reduce the severe impact of cancer on the women of South Carolina. This group, staffed by DHEC, grew out of the Breast and Cervical Cancer Task Force and addresses cancer education and advocacy issues. The WCC recently became a 501(c)(3) organization and is branching out to address broader cancer topics, including men's cancer issues. The WCC has more than 460 members including an active Board of Directors and committee structure.

Past coalition activities included advocacy for the passage of the Genetics Privacy Bill, a Colorectal Cancer Pilot Project, and creation of a Cancer Resource Guide for South Carolina. The WCC recently completed development of the WCC Cancer Education Guide, a tool designed to educate South Carolinians on cancer prevention, early detection and care. To date, more than 60 community members have been trained and conduct educational programs on cancer issues throughout the state.

- **Cancer Control Advisory Committee (CCAC):** The CCAC is a statewide group that advises DHEC on professional issues pertaining to cancer prevention, detection, care and surveillance. Members are appointed by the DHEC commissioner, meet twice a year, and have subcommittees that work on specific cancer issues. The committee serves as an advocate for the poor and underserved populations and guides the State Aid Cancer Program. It also was instrumental in the development of the DHEC five-year comprehensive cancer plan.

- **Comprehensive Cancer Plan:** "Cancer Prevention and Care in South Carolina: A Plan For Action" was pro-

Cardiovascular disease

Cardiovascular disease (CVD) is South Carolina's leading cause of death for both men and women among all racial and ethnic groups. In 2000, 12,780 South Carolinians died from CVD. Heart disease and stroke accounted for 44,291 hospitalizations in 2000, with a total hospitalization cost of more than \$937 million.

In 1999, South Carolina ranked fifth in the nation for stroke deaths and was 25 percent higher than the U.S. average. South Carolina is one of 11 states referred to as the "Stroke Belt," with the coastal and Pee Dee areas of South Carolina designated as the "Stroke Buckle" because of an exceptionally high rate of stroke death.

Risk factors for CVD include smoking, obesity, physical inactivity, poor nutrition, hypertension, diabetes and high cholesterol. African Americans are 1.5 times more likely to suffer from heart disease and twice as likely to develop stroke than whites. Additionally, more than 50 percent of whites and blacks older than 65 in South Carolina have high blood pressure.

The demographic shift to an older population is occurring at a faster rate in the Southeast than in the nation as a whole, possibly because of the migration of older persons from other areas of the country. As a result, the disproportionate burden of CVD in South Carolina is expected to increase.

Mental disorders

An estimated 22.1 percent of Americans 18 and older - one in five adults - suffer from a diagnosable mental disorder in a given year. Approximately 18.8 million American adults in a given year have a depressive disorder. Nearly twice as many women as men are affected by a depressive disorder each year. Depression in older adults not only causes distress and suffering, but also leads to impairments in physical, mental and social functioning. A substantial proportion of older patients receive no treatment or inadequate treatment for their depression in primary care settings.

Risk factors for late-onset depression (later than age 60) include widowhood, educational attainment less than high school, impaired functional status, and heavy alcohol consumption. According to the Surgeon General's report on mental health, only about 11 percent of depressed patients in primary care receive adequate antidepressant treatment, while 34 percent receive inadequate treatment, and 55 percent receive no treatment.

The signs and symptoms of depression are frequently attributed to "normal aging." More than 90 percent of people who kill themselves have a diagnosable mental disorder, commonly a depressive disorder. Seniors have the highest suicide rate in the U.S. Seniors also have a higher ratio of completed suicides than other age groups. An average of one elderly person every 1.5 hours kills himself. S.C. is ranked 18th in the nation in suicide, with a rate of 13.4 and 497 suicides in 1996.

Increase local capacity to promote and protect healthy communities

duced in 1999 and is designed to guide cancer control efforts from 1999-2004. This plan was produced by a collaboration among our cancer control partners, including but not limited to the Cancer Control Advisory Committee, DHEC staff, American Cancer Society, University of South Carolina and MUSC. The plan includes goals and objectives for the following topic areas: Collaboration and Partnerships, Surveillance, Cancer Prevention, Cancer Detection, Genetics and Healthcare, Cancer Care and Palliative Care.

What you can do:

- Call your local American Cancer Society office and check out events and programs to see how you can participate in fund-raising efforts, support local and national legislation, and help with activities in your area.
- If you can't prevent cancer, the next best thing you can do to protect your health is to detect it early. Learn to recognize symptoms, get regular checkups, and perform self-exams. Talk to your physician about what cancer screening tests are right for you.
- What you eat and drink, how you live, and where you work all are factors that can affect your risk for cancer. Learn more about these risks and what you can do to minimize them.

Resources:

American Cancer Society
(803) 750-1693 www.cancer.org

DHEC Comprehensive Cancer Division, Bureau
of Chronic Disease Prevention and Control
(803) 545-4115

South Carolina Central Cancer Registry
(803) 898-3696

How does South Carolina Rank* in Cancer Mortality?

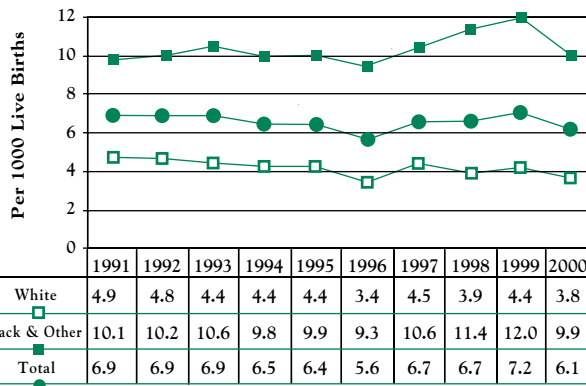
Multiple Myeloma	2nd
Oral/Pharynx	2nd
Prostate	3rd
Pancreas	4th
Esophagus	5th
Cervix	8th
Larynx	10th

Data Source: SEER Cancer Statistics Review, 1973-1998

*A rank of 1st would mean South Carolina has the highest mortality rate in the nation.

Appendix A — South Carolina Data

Neonatal Mortality Rates By Race



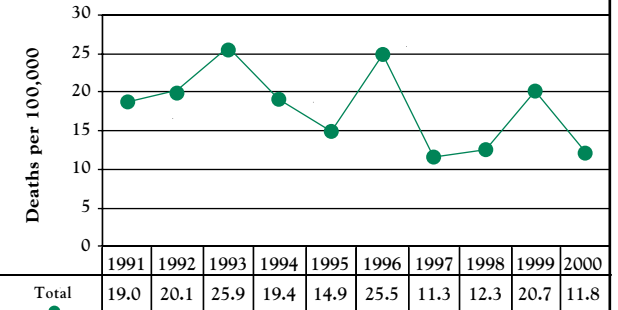
Data Source: Vital Statistics, SCDHEC

Postneonatal Mortality Rates By Race



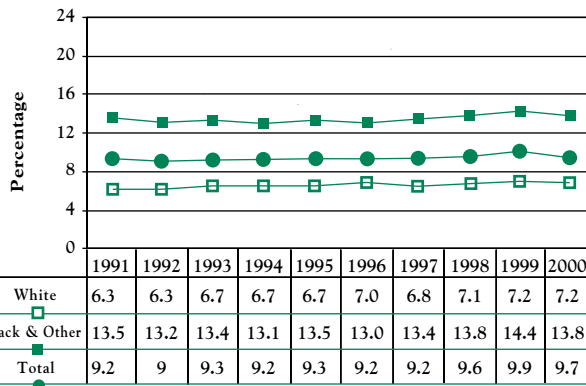
Data Source: Vital Statistics, SCDHEC

Child Accidents Death Rates Ages 1-4



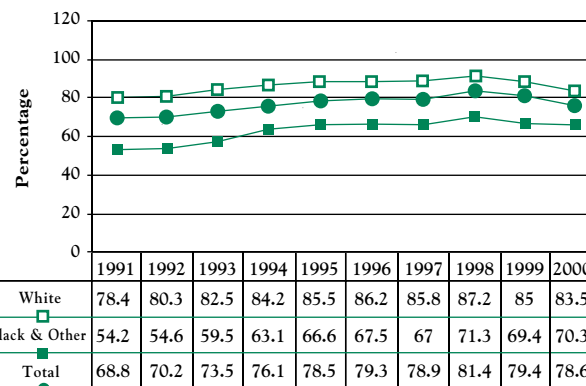
Data Source: Vital Statistics, SCDHEC

Percentage of Low Birth Weight Infants (<2500 grams) By Race



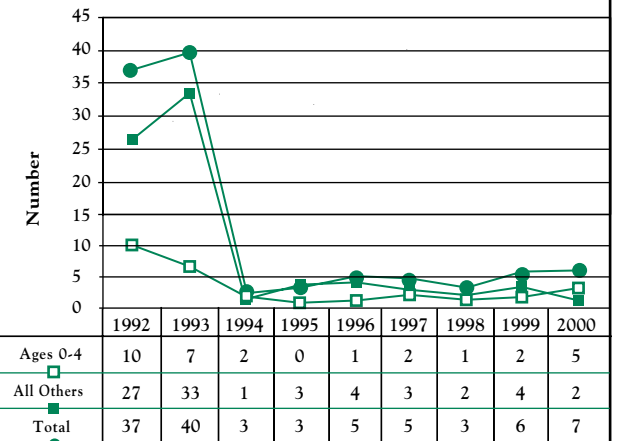
Data Source: Vital Statistics, SCDHEC

Percent Women Receiving Prenatal Care During First Trimester by Race



Data Source: Vital Statistics, SCDHEC

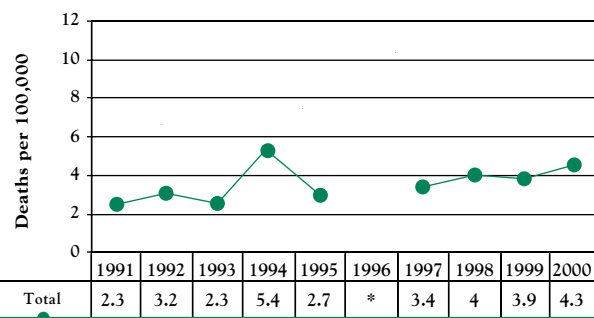
Influenzae B (Invasive Infection) Cases



Data Source: SC Reportable Disease Surveillance System, SCDHEC

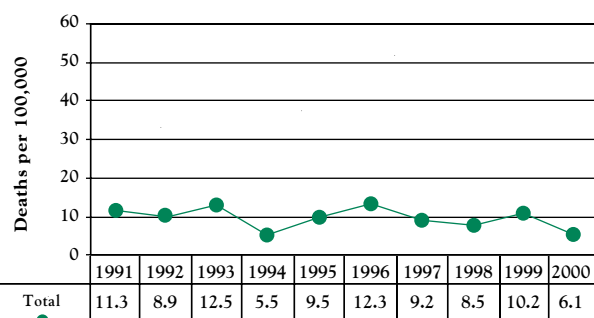
Appendix A — South Carolina Data

Child Homicide Rates Ages 1-4



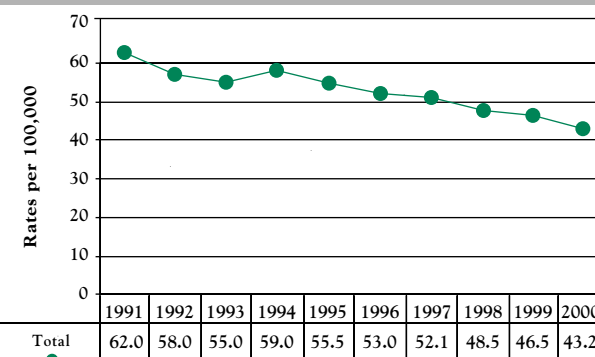
Data Source: Vital Statistics, SCDHEC * < 5 deaths

Teenage Suicide Rates Ages 15-19



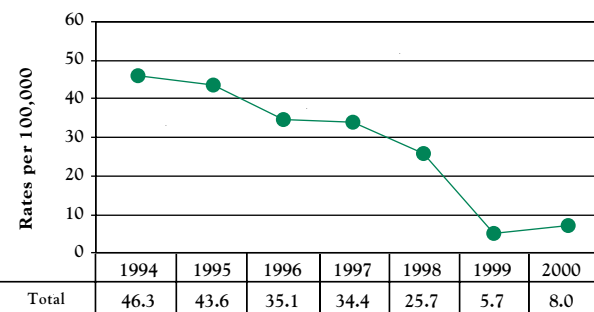
Data Source: Vital Statistics, SCDHEC

Teenage Pregnancy Rates Ages 15-19



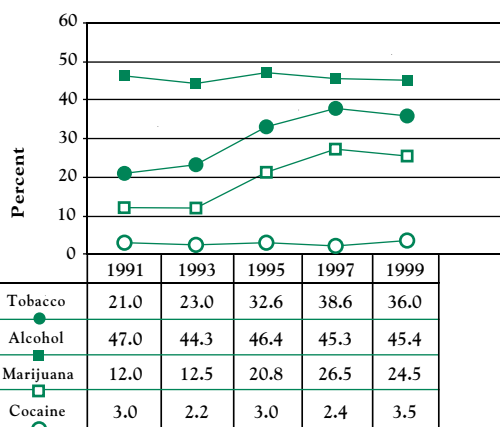
Data Source: Vital Statistics, SCDHEC

Children Hospitalized for Chicken Pox Ages 0-3



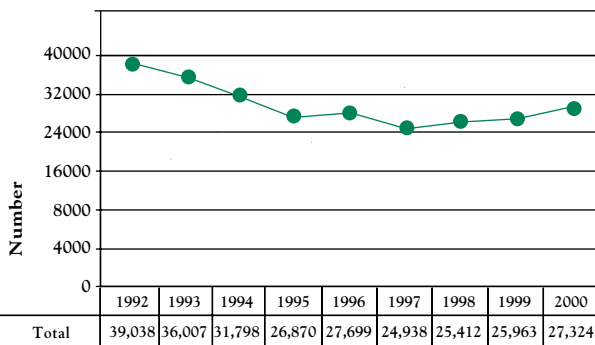
Data Source: Hospital Discharge Survey, SC Budget & Control Board, Office of Research & Statistics

High School Substance Abuse Percentages



Data Source: Youth Risk Behavior Survey, SCDOE

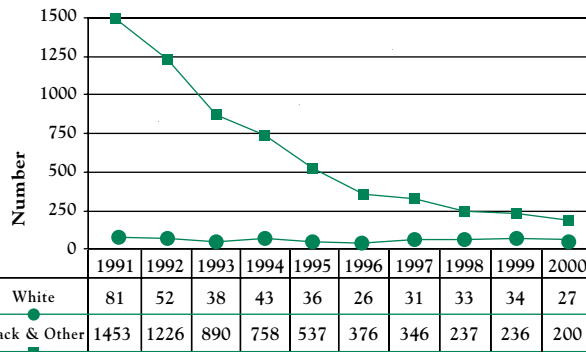
HIV Testing in DHEC Clinics Ages 20-44



Data Source: Bureau of Laboratories, SCDHEC

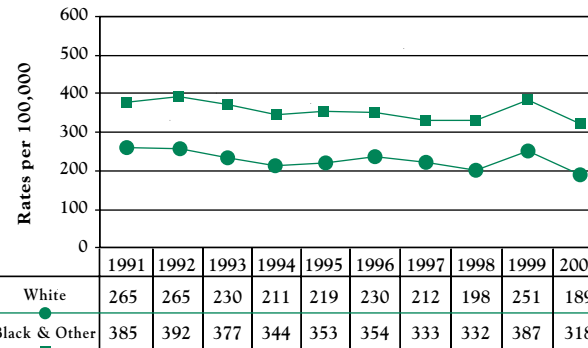
Appendix A — South Carolina Data

Infectious Syphilis All Ages



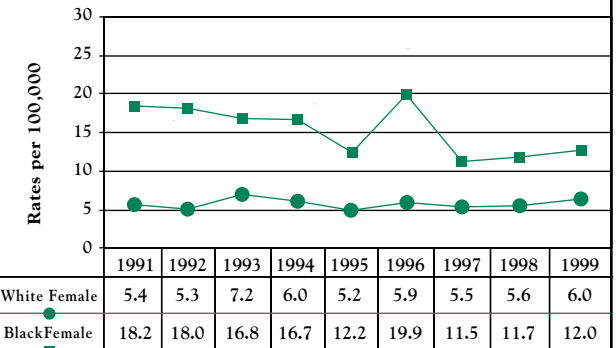
Data Source: SC Reportable Disease Surveillance System, SCDHEC

Pelvic Inflammatory Disease Rates, All Ages



Data Source: Hospital Discharge Survey, SC Budget & Control Board, ORS

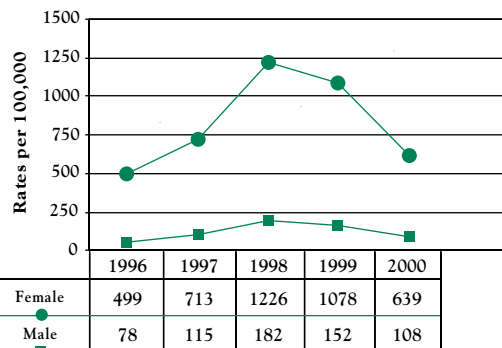
Cervical Cancer Mortality Rates, Ages 45-64



Data Source: Vital Statistics, SCDHEC

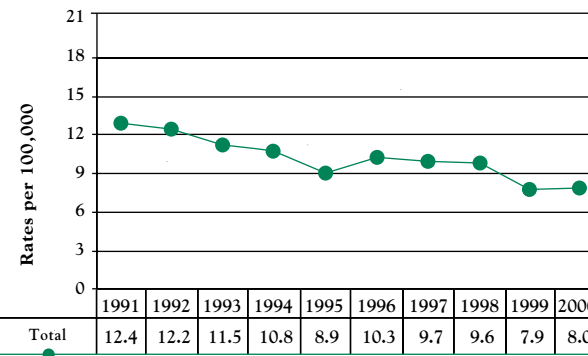
2000 Total rate = 5.

Chlamydia Genital Infection Rates, Ages 20-44



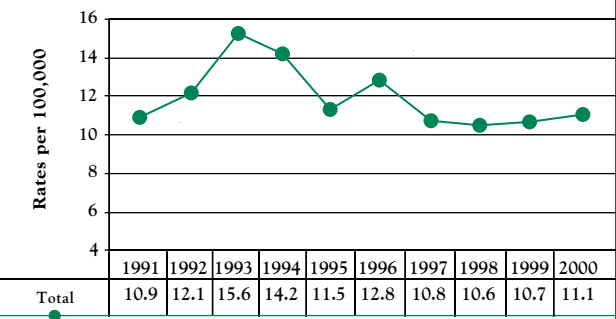
Data Source: SC Reportable Disease Surveillance System, SCDHEC

Age-Adjusted Homicide Rates All Ages



Data Source: Vital Statistics, SCDHEC

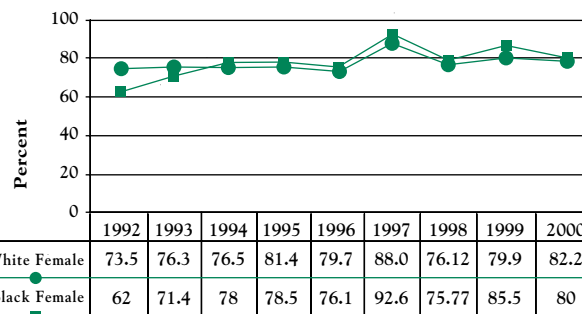
Age-Adjusted Suicide Rates, All Ages



Data Source: Vital Statistics, SCDHEC

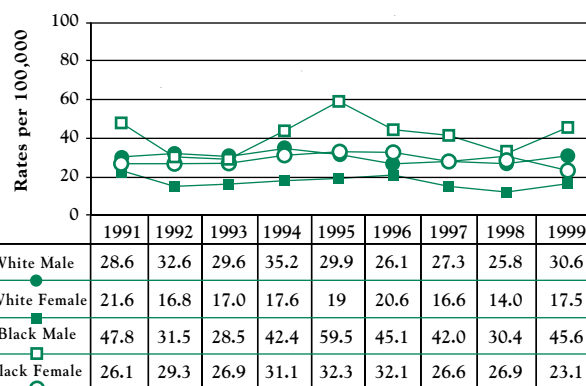
Appendix A — South Carolina Data

Prevalence of PAP Screening (past 3 years), Women Ages 45 and Older



Data Source: Behavior Risk Factor Surveillance System, SCDHEC

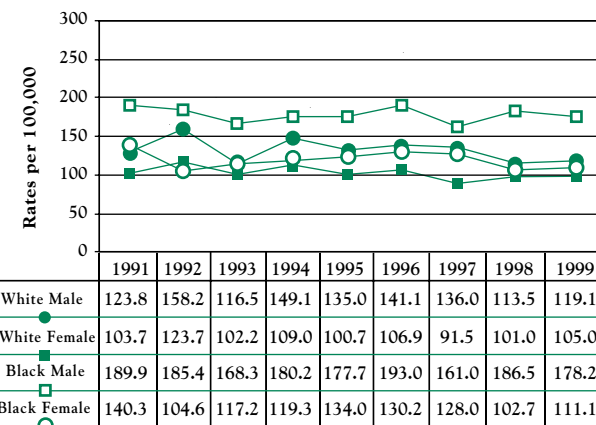
Colorectal Cancer Mortality Rates Ages 45-64



Data Source: Vital Statistics, SCDHEC

2000 Total rate=23

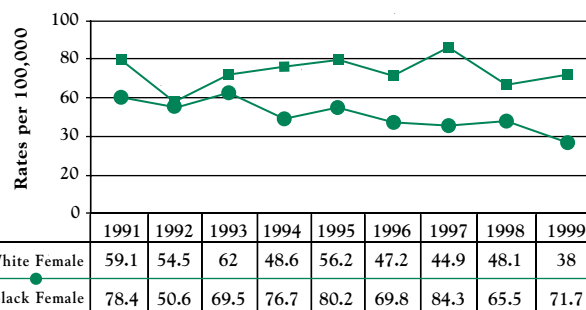
Colorectal Cancer Mortality Rates Ages 65 and Older



Data Source: Vital Statistics, SCDHEC

2000 Total rate=122.6

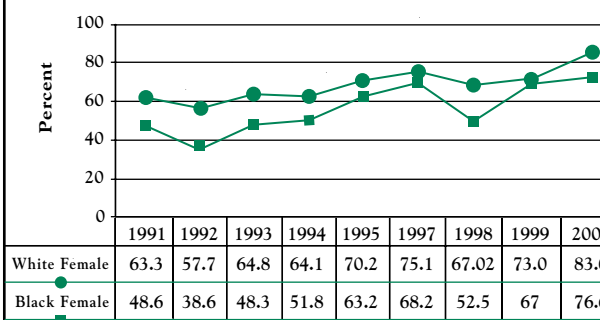
Breast Cancer Mortality Rates, Ages 45-64



Data Source: Vital Statistics, SCDHEC

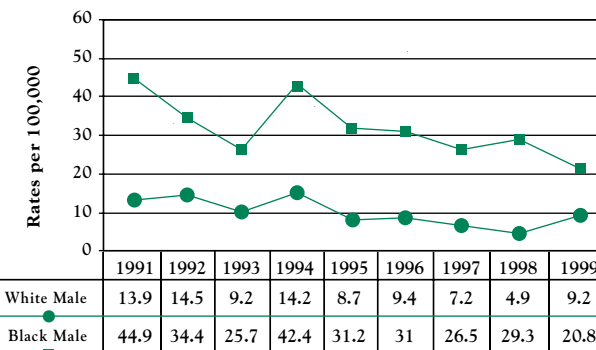
2000 Total rate = 44.8

Prevalence of Mammography and CBE* (past 2 years), Women Ages 45-64



Data Source: Behavior Risk Factor Surveillance System, SCDHEC
*Clinical Breast Exam

Prostate Cancer Mortality Rates, Ages 45-64

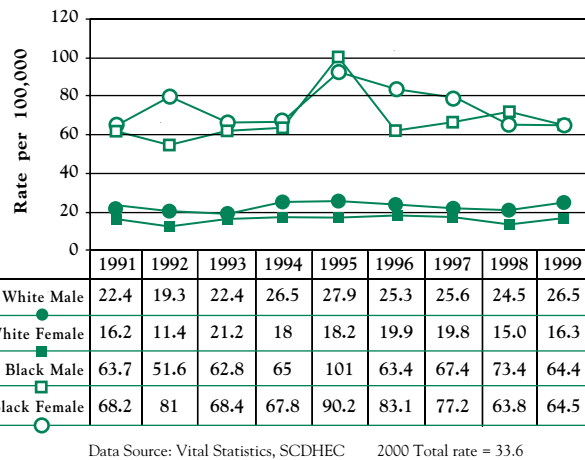


Data Source: Vital Statistics, SCDHEC

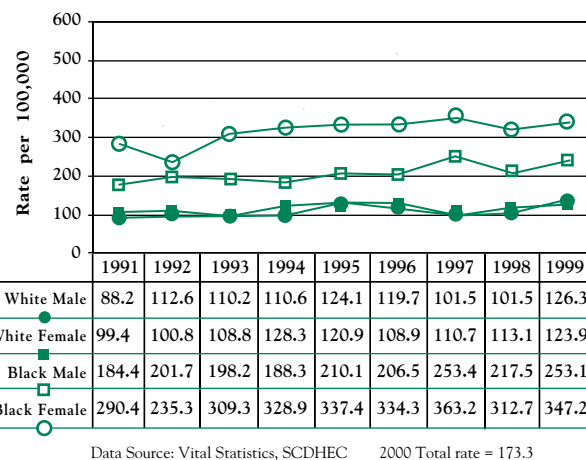
2000 Total rate = 9.0

Appendix A — South Carolina Data

Diabetes Mortality Rates, Ages 45-64

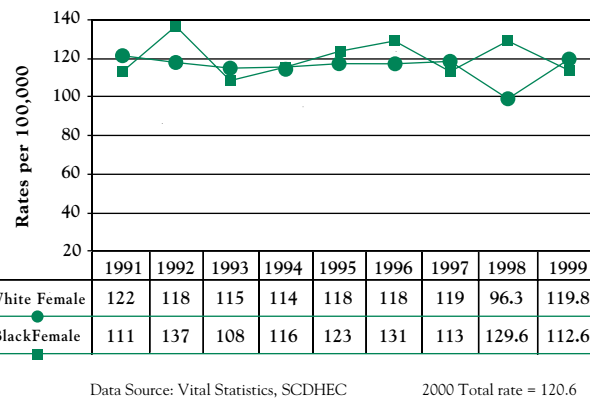


Diabetes Mortality Rates, Ages 65 and Older

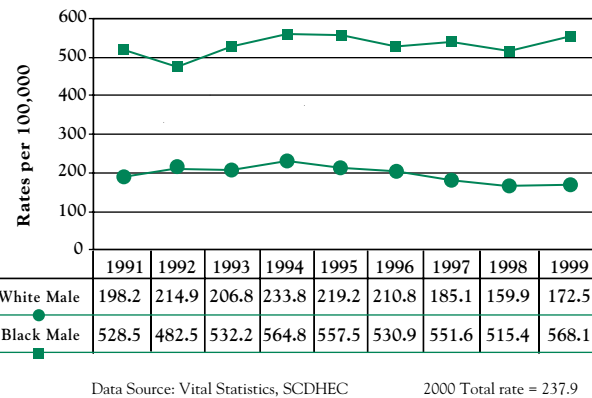


NOTE: Heart Disease,
Stroke and Lung Cancer
Rates are on pages 29-31

Breast Cancer Mortality Rates, Ages 65 and Older



Prostate Cancer Mortality Rates, Ages 65 and Older



Intro to Appendix B

HEALTHY PEOPLE OBJECTIVE DATA SOURCE

01-01	Current Population Survey (CPS), U.S. Census Bureau, Bureau of Labor & Statistics. www.census.gov	22-07	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
14-24a	National Immunization Survey (NIS), CDC, NIP and NCHS. www.cdc.gov/nis	25-11	www.cdc.gov/nccdphp/dash/yrbs/index.htm
14-29a	SC: DHEC Behavioral Risk Factor Surveillance Survey (BRFSS), Bureau of Epidemiology. www.scdhec.net/hs/epi	26-10a	SC: Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP. www.cdc.gov/nccdphp/dash/yrbs/index.htm US: National Household Survey on Drug Abuse (NHSDA), SAMHSA. www.samhsa.gov
14-29b	US: National Health Interview Survey (NHIS), CDC, NCHS. www.cdc.gov/nchs/nhis.htm	26-10c	SC: SC Department of Alcohol and Other Drug Abuse Services. www.daodas.state.sc.us US: National Household Survey on Drug Abuse (NHSDA), SAMHSA. www.samhsa.gov
15-15a	SC: DHEC Vital Records, Office of Public Health Statistics and Information Services. www.scdhec.net/scan	26-11c	SC: DHEC Behavioral Risk Factor Surveillance Survey (BRFSS), Bureau of Health Services, Division of Epidemiology www.scdhec.net/hs/epi US: National Household Survey on Drug Abuse (NHSDA), SAMHSA. www.samhsa.gov
16-06a	US: National Vital Statistics System - Mortality (NVSS-M), CDC, NCHS. www.cdc.gov/nchs/nvss.htm	27-01a	SC: DHEC Behavioral Risk Factor Surveillance Survey (BRFSS), Bureau of Health Services, Division of Epidemiology www.scdhec.net/hs/epi US: National Health Interview Survey (NHIS), CDC, NCHS. www.cdc.gov/nchs/nhis.htm
19-02	SC: DHEC Behavioral Risk Factor Surveillance Survey (BRFSS), Bureau of Epidemiology. www.scdhec.net/hs/epi US: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. www.cdc.gov/nchs/nhanes.htm SC: DHEC Behavioral Risk Factor Surveillance Survey (BRFSS), Bureau of Epidemiology. www.scdhec.net/hs/epi US: Behavioral Risk Factor Surveillance System (BRFSS), CDC, NCCDPHP. www.cdc.gov/nccdphp/brfss	27-02b	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP. www.cdc.gov/nccdphp/dash/yrbs/index.htm

HEALTHY PEOPLE 2010 LEADING HEALTH INDICATORS

The Leading Health Indicators will be used to measure the health of the nation over the next 10 years. Each of the 10 Leading Health Indicators has one or more objectives from Healthy People 2010 associated with it. As a group, the Leading Health Indicators reflect the major health concerns in the United States at the beginning of the 21st century. The Leading Health Indicators were selected on the basis of their ability to motivate action, the availability of data to measure progress, and their importance as public health issues. The national figures were reproduced from www.health.gov/healthypeople/Document/HTML/uih/uih_4.htm

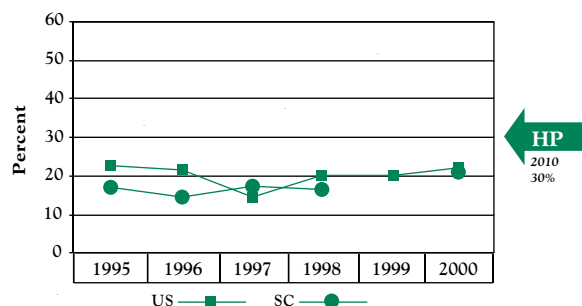
The Leading Health Indicators are:

1. Physical Activity
2. Overweight and Obesity
3. Tobacco Use
4. Substance Abuse
5. Responsible Sexual Behavior
6. Mental Health
7. Injury and Violence
8. Environmental Quality
9. Immunization
10. Access to Health Care

South Carolina government agencies are actively involved in making sure the Healthy People 2010 Objectives are met. The challenge of tracking the Leading Health Indicators requires new venues for data collection and surveillance. Thus, a few of the indicator's objectives do not have any historical values for South Carolina. These objectives were not presented in this report. It is our hope to obtain this information in the future.

Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

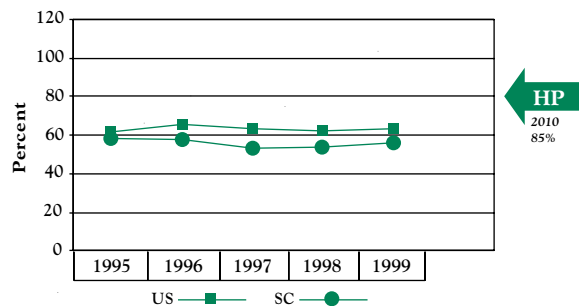
Adult Participation in Regular Physical Activity*, SC and US



Data Source: BRFSS

*Adults aged 18 years and older who engage in 30 minutes of moderate physical activity 5 or more days per week.

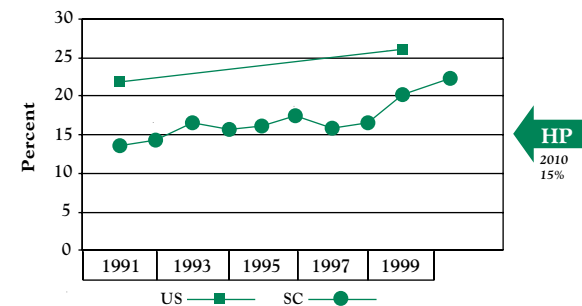
Adolescent Participation in Vigorous Physical Activity*, SC and US



Data Source: YRBS

*Adolescents in grades 9-12 who engage in 20 minutes of vigorous physical activity 3 or more days per week.

Obese Adults* Age 20 and Older, SC and US



Data Source: SC BRFSS, US NHANES

*Obesity defined as a BMI of 30 kg/m² or more
NOTE: US data for 1991 is 1988-1994

Physical Activity

22-2 Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day.

Adult Participation in Regular Physical Activity, SC by Race

Year	White %	Black %
1995	17.4	18.9
1996	14.5	18.5
1997	18.5	16.0
1998	18.5	16.0
1999	NA	NA
2000	22.7	21.8

Physical Activity

22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.

Adolescent Participation in Vigorous Physical Activity, SC by Race

Year	White %	Black %
1991	62.7	52.7
1992	NA	NA
1993	60.8	50.5
1994	NA	NA
1995	59.4	42.5
1996	NA	NA
1997	59.8	44.3
1998	NA	NA
1999	61.8	48.3

Overweight and Obesity

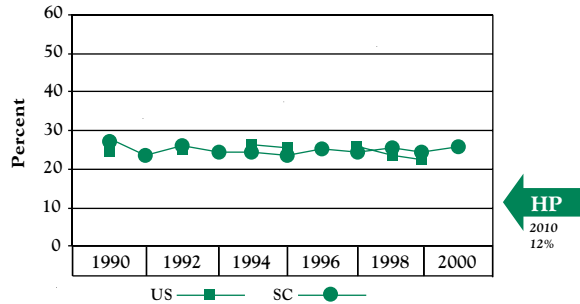
19-2 Reduce the proportion of adults who are obese.

Obese Adults, SC by Race

Year	White %	Black %
1991	11.9	19.7
1992	13.3	19.9
1993	14.4	23.9
1994	11.6	27.1
1995	15	20.4
1996	13.9	27.7
1997	13.3	23
1998	16.2	31.3
1999	13.3	23
2000	18	34.6

Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

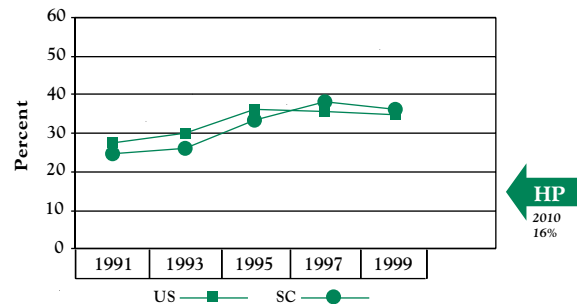
Current Cigarette Smoking* Among Adults, SC and US



Data Source: SC BRFSS, US Age-adjusted NHIS

* Adults ages 18 years and older who smoked more than 100 cigarettes in their lifetime and smoked on some or all days in the past month.

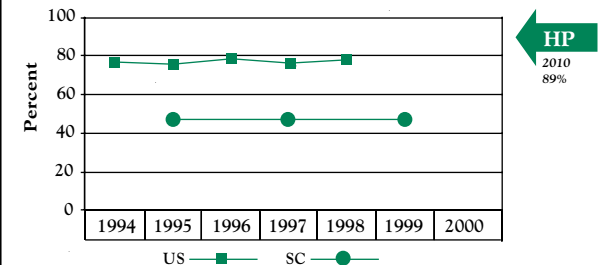
Current Cigarette Smoking* Among Adolescents in Grades 9-12, SC and US



Data Source: YRBS

* Adolescents who smoked one or more cigarettes in the past 30 days.

US Alcohol and Drug-Free 12-17 Year Olds in Past 30 Days Compared to SC 14-18 Year Olds



Data Source: SC YRBS, US SAMHSA

Tobacco Use

27-1a Reduce cigarette smoking by adults.

Cigarette Smoking Among Adults, SC by Race

Year	White %	Black %
1990	29.7	21.3
1991	25.6	16.7
1992	28.3	22.8
1993	25.5	20.8
1994	26	18.3
1995	25.5	19.8
1996	26.8	20.1
1997	24.9	19.4
1998	26.5	19.2
1999	25.5	18.3
2000	26.7	19.1

Tobacco Use

27-2b Reduce cigarette smoking by adolescents.

Cigarette Smoking Among Adolescents in Grades 9-12, SC by Race

Year	White %	Black %
1991	35.0	10.0
1992	NA	NA
1993	37.3	10.8
1994	NA	NA
1995	42.0	19.0
1996	NA	NA
1997	47.2	28.4
1998	NA	NA
1999	45.9	22.8

Substance Abuse

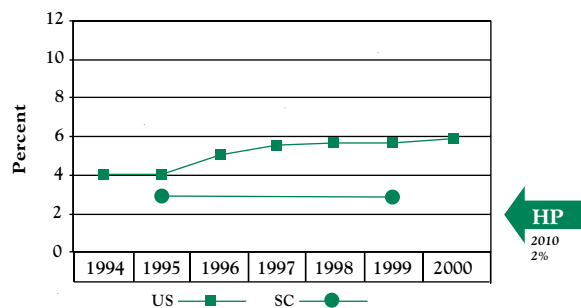
26-10a. Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days.

Adolescents aged 12-17 Years Who Reported No Use of Alcohol or Illicit Drugs in Past 30 Days, SC by Race

Year	White %	Black %
1994	NA	NA
1995	42.6	51.7
1996	NA	NA
1997	42.6	51.1
1998	NA	NA
1999	41.3	53.9
2000	NA	NA

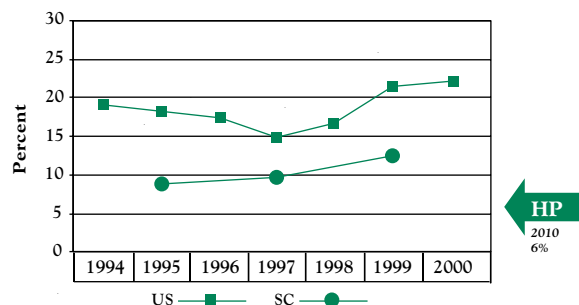
Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

Proportion of Adults Using Illicit Drugs in Past 30 Days, SC and US



Data Source: SC DAODAS, US SAMHSA

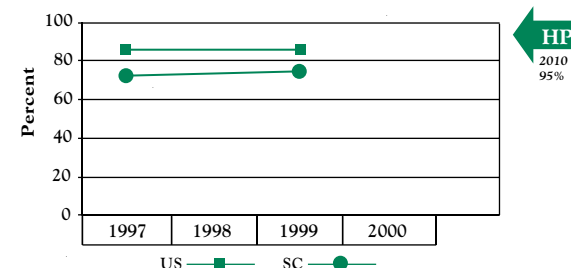
Proportion of Adults Binge Drinking,* SC and US



Data Source: SC BRFSS, US SAMHSA

* Adults aged 18 years and older who reported having 5 or more drinks on an occasion, one or more times in the past month.

Adolescents in Grades 9-12 Who are Not Sexually Active or Sexually Active and Used Condoms, SC and US



Data Source: YRBS

Substance Abuse

26-10c. Reduce the proportion of adults using illicit drugs during the past 30 days.

Adults Who Reported Illicit Drug Use in Past 30 Days, SC by Race

Year	White %	Black %
1994	NA	NA
1995	2.8	2.3
1996	NA	NA
1997	NA	NA
1998	NA	NA
1999	2.7	2.8
2000	NA	NA

Substance Abuse

26-11c. Reduce the proportion of adults engaging in binge drinking of alcoholic beverages during the past month.

Adults Who Reported Binge Drinking in Past 30 Days, SC by Race

Year	White %	Black %
1994	NA	NA
1995	9.8	7.8
1996	NA	NA
1997	11.2	13.4
1998	NA	NA
1999	13.4	8.6
2000	NA	NA

Responsible Sexual Behavior

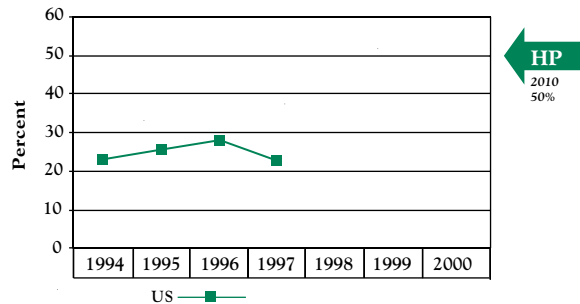
25-11. Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active.

Adolescents in Grades 9-12 Who are Not Sexually Active or Sexually Active and Used Condoms, SC by Race

Year	White %	Black %
1997	79.6	70.4
1998	NA	NA
1999	80.6	72.8
2000	NA	NA

Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

Adults With Recognized Depression Who Received Treatment*, U.S.

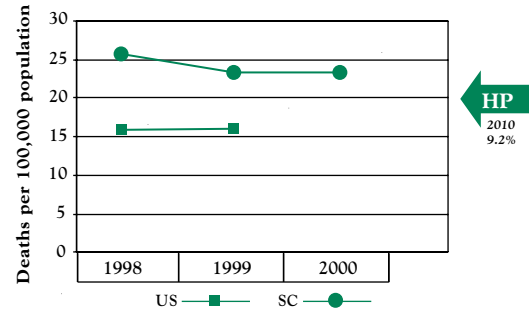


Data Source: US NHSDA

* Depression is defined as major depressive episode in the past year.

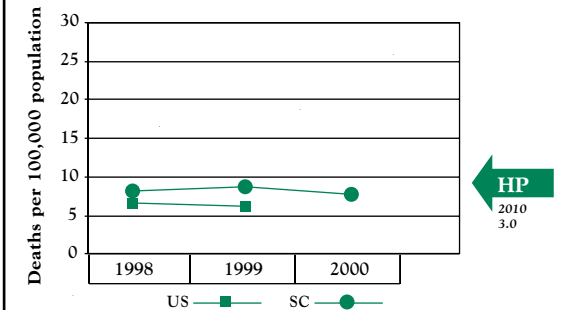
** Treatment is defined as treatment in the past year for psychological problems or emotional difficulties at a mental health clinic or by a mental health professional on an outpatient basis or treatment for psychological or emotional difficulties at a hospital overnight or longer.

Motor Vehicle Age-Adjusted Mortality Rates Among Adults, SC and US



Data Source: SC Vital Records, US NCHS

Homicide Age-Adjusted Mortality Rates Among Adults, SC and US



Data Source: SC Vital Records, US NCHS

Mental Health

18-9b. Increase the proportion of adults with recognized depression who receive treatment. South Carolina data not available.

Injury and Violence

15-15a. Reduce deaths caused by motor vehicles.

Motor Vehicle Age-Adjusted Mortality Rates (per 100,000) Among Adults, SC by Race

Year	White	Black & Other
1998	24.2	29.1
1999	21.2	29.5
2000	NA	NA

Note: For 1998, cause of death classification based on ICD-9; for 1999, cause of death classification based on ICD-10.

Injury and Violence

15-32. Reduce homicides.

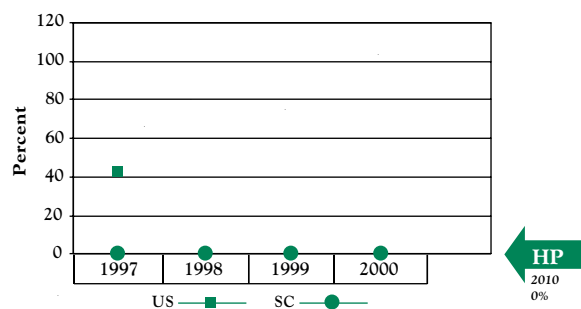
Homicide Age-Adjusted Mortality Rates (per 100,000) Among Adults, SC by Race

Year	White	Black & Other
1998	5.4	16.6
1999	4.7	14.4
2000	NA	NA

Note: For 1998, cause of death classification based on ICD-9; for 1999, cause of death classification based on ICD-10.

Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

Persons Exposed to Ozone Above EPA Standard, SC and US



Data Source: SC DHEC EQC, US EPA

HP
2010
0%

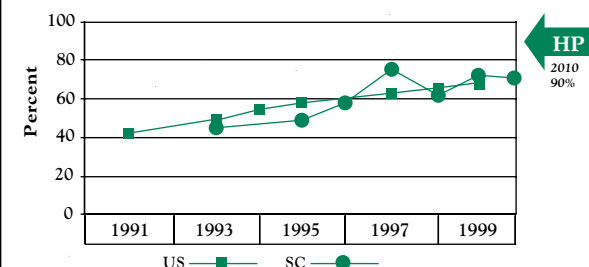
Children Aged 19 to 35 Months Who Received all Recommended Vaccines*, SC and US



Data Source: NIS
* 4 DTap, 3 polio, 1MMR, 3 Hib, 3 Hep B

HP
2010
80%

Adults Aged 65 Years and Older Who Received Influenza Vaccine in the Past 12 Months, SC and US



Data Source: SC BRFS, US NCHS

HP
2010
90%

Environmental Quality

8-1a. Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for ozone. South Carolina meets the health based standards for ozone.

Immunization

14-24a. Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years.

Children Aged 19 to 35 months Who Received all Recommended Vaccines, SC by Race

Year	White %	Black %
1997	70.1	80.3
1998	80.6	86.3
1999	81.4	73.2
2000	81.7	73.9

Immunization

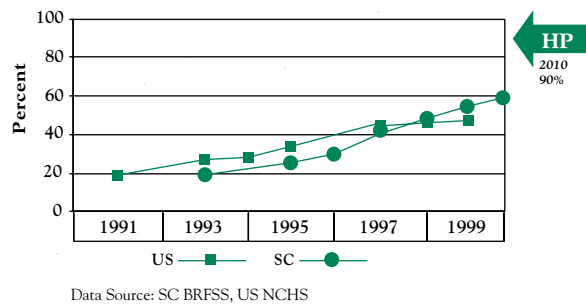
14-29a. Increase the proportion of noninstitutionalized adults 65 years and older who are vaccinated annually against pneumococcal disease.

Adults Aged 65 Years and Older Who Received Influenza Vaccine in the Past 12 Months, SC by Race

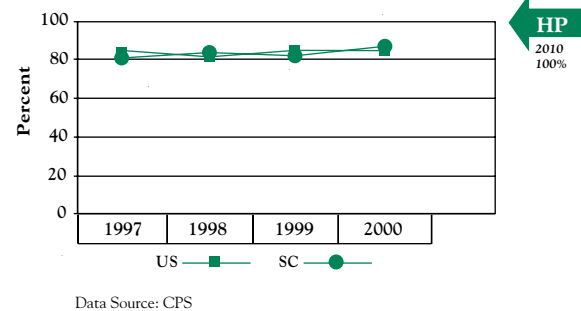
Year	White %	Black %
1991	NA	NA
1992	NA	NA
1993	50.9	37.8
1994	NA	NA
1995	56.3	34.2
1996	59.4	53.3
1997	75.3	71.5
1998	67.4	44.5
1999	73.2	58.3
2000	72.3	61.9

Appendix B — Healthy People 2010 Objectives - S.C. and U.S. Data

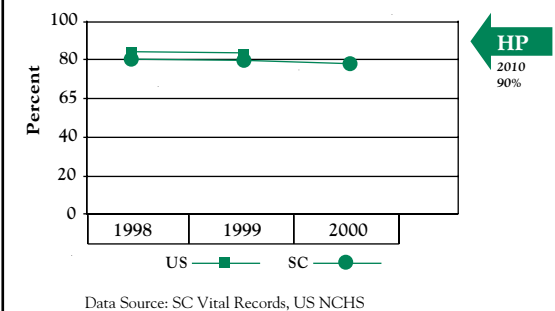
Adults Aged 65 Years and Older Who Ever Received Pneumococcal Vaccine, SC and US



Persons Under Age 65 with Health Care Coverage, SC and US



Pregnant Women who Began Prenatal Care in the First Trimester, SC and US



Immunization

14-29a. Increase the proportion of noninstitutionalized adults 65 years old and older ever vaccinated against pneumococcal disease.

Adults Aged 65 Years and Older Who Ever Received Pneumococcal Vaccine, SC by Race

Year	White %	Black %
1991	NA	NA
1992	NA	NA
1993	22.0	15.5
1994	NA	NA
1995	30.8	13.0
1996	34.3	26.5
1997	47.0	19.1
1998	56.3	27.3
1999	61.0	38.9
2000	63.9	44.4

Access to Health Care

1-1. Increase the proportion of persons with health insurance.

Persons Under Age 65 with Health Care Coverage, SC by Race

Year	White %	Black %
1997	NA	NA
1998	NA	NA
1999	NA	NA
2000	NA	NA

Access to Health Care

16-6a. Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy.

Pregnant Women who Began Prenatal Care in the First Trimester, SC by Race

Year	White %	Black %
1998	86.1	69.6
1999	85.0	69.4
2000	83.5	70.3

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For data on these and additional topics, see appendices.

Editorial Information

We gratefully acknowledge the assistance of all those who contributed to this report:

Increase local capacity to promote and protect healthy communities

Lavell Thornton	Nancy Whittle	Susan Bolick-Aldrich
Lill Mood	Dixie Roberts	Daphne Neel
Richard Chesley		

Assist communities in planning for and responsibly managing growth

Anne Marie Johnson	Janet Clarke	Ward Reynolds
Myra Reece	Scott Reynolds	

Protect and enhance coastal resources

Ward Reynolds	Janet Clarke	Mike Robertson
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Protect, continually improve and restore the environment

Scott Reynolds	Keith Lindler	Sally Knowles
Gail Jeter	Renee Shealy	

Improve health for all and eliminate health disparities

Donna E. Smith	Youjie Huang	John Barnhart
Rhonda L. Hill	Jan Easterling	

Assure children and adolescents are healthy

Max Learner	Joe Kyle	Herman Core
Patsy Myers		

Increase the quality and years of healthy life for seniors

Jesse Greene	Natalie Scruggs	Susan Bolick-Aldrich
Laura Sanders	Alan Waln	Irene Prabhu Das
Conrad Otterness	Mary Kelly	Cora Plass
Melody Crocker	Jan Easterling	Hellen Fellers-Dekle
Ed Spencer (S.C. Dept. of Mental Health)		

Appendix coordination

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The writers and editors dedicate this book to Douglas E. Bryant, whose 25 years of service to public health, including his service as commissioner of the S.C. Department of Health and Environmental Control from 1993 to 2001, greatly improved and enhanced the health and environment in our state.



Printed April 2002
S.C. Department of Health and Environmental Control
2600 Bull Street
Columbia, S.C. 29201
(803) 898-3886

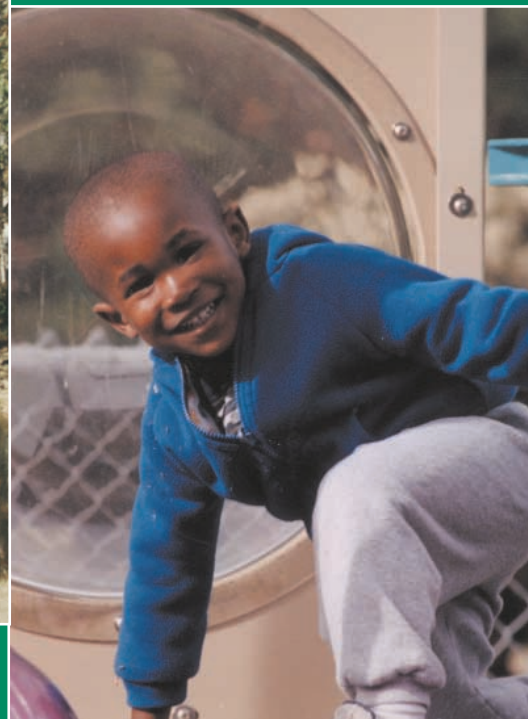
In accordance with Proviso 129.55 of the fiscal 1993-94 Appropriation Act, the following information is provided regarding this publication:

Total print cost: \$9,969.76
Total number of documents printed: 7,000
Cost per unit: \$1.42
Printed on recycled paper
ML#006048

We gratefully acknowledge the dedicated assistance of the S.C. Budget and Control Board Office of Research and Statistics and DHEC's Office of Planning, Bureau of Business Management, and Educational Resources Center for distribution of this publication. The information in this book reflects the daily activities of front-line and support staff whose work promotes and protects the health and the environment of South Carolina.

Photography Editor: Deborah Farr
Cover photos: Deborah Farr, Erica Morgan
Inside photos: Deborah Farr, Erica Morgan, Tedd Scott, Mike Suber, Amy Carter
Editors: Joyce Hallenbeck, Jan Easterling
Design by Semaphore Inc.
Printing by Guest Printing Co.

For additional copies of *Healthy People Living in Healthy Communities*, fax your request to DHEC's Educational Resources Center at (803) 898-3800 or e-mail hortonm@dhec.state.sc.us. Visit DHEC's Web site at www.scdhec.net. For more information on the contents of this publication, contact the Division of Media Relations at (803) 898-3886.



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